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THE GENERAL DYNAMICS OF MONEY

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Columbia University

I. INTRODUCTION: THE BASIC EQUATIONS

IN THE last few years the general body of monetary theory has made great advances in a variety of directions. Yet at the present day it is in a confused state, and a number of quite different groups of ideas are contending for dominance. Each group denies the validity of the others in important respects, each reaches conclusions on matters of practical policy which are at variance with those of the others, and each has its own enthusiastic supporters. The divergences are so sharp as to make it improbable that all can be right in all respects at the same time.

It seems clear that these divergences must be due in considerable part to a failure, often unrecognized, to agree on how the mechanism of production and exchange for money actually works. This failure is in turn, I think, largely explained by the fact that few writers have been willing to trace through[1] a sufficiently varied series of typical money-using operations from their beginnings to their probable end effects. The majority have sought, instead, to jump from the examination of particular aspects of certain cases to practical conclusions of wide scope. The present paper is an endeavor to fill some part of this gap and thus to pro-

[1] Hypothetically, of course. Direct observation of the whole course of the flows of money payments is not now possible.

vide foundations on which more elaborate structures can be built.[2]

The main purpose of the paper is to make an analysis of the broad effects of changes in all the principal monetary variables and particularly of changes in the size and velocity of the money stock. Many of these changes, though not all, will be shown to be identical with acts of new saving or new investment. The analysis runs in terms of factors and categories which correspond as closely as possible to the actual money-using operations of individuals and business enterprises. Most of the factors are of such character that their size can be estimated numerically, directly or indirectly, from the existing statistics. This latter fact gives the analysis a definite advantage over many of the theoretical formulations now current. One of the striking end results obtained is the development of an expression which, it is hoped, will permit a positive though indirect numerical estimate to be made of the money volume of current new investment.

The core of the analysis is the basic equation, giving the general relations between the principal factors in the money-production-exchange complex, which I have presented elsewhere.[3] This equation is as follows. Let M be the aggregate stock of money; for convenience, take this to be "circulating" money, which is roughly the sum of all individual demand deposits (including government deposits) and all currency in circulation outside the banks and the Treasury.[4] Let C be the average circular velocity of this money stock, or the number of times in the unit period that the average unit of money traverses the average circle of money payments from consumers to producers in the aggregate and back to consumers. Let NI be the national money income received in the unit period. This is the sum of all money incomes received by in-

[2] I am indebted to a number of friends, and particularly to my colleague, Dr. A. D. Gayer, for reading earlier drafts of this paper and for making a variety of helpful suggestions.

[3] See my article on "Money, Prices and Production," *Quarterly Journal of Economics*, November, 1933, and my book on *The Behavior of Money* (New York, 1936), chap. v. I have revised and simplified the analysis of circular velocity itself in an article on "The Components of the Circular Velocity of Money," *Quarterly Journal of Economics*, February, 1937.

[4] See my *Behavior of Money*. Time and savings deposits are there excluded from the category of "circulating" money, though included in "total" money.

dividuals, whether through actual cash payments to them, or as cash incomes received and administered for their account by agents (as when a corporation transfers earnings to surplus and thus reinvests them). Capital gains and losses, however, are excluded.[5] Finally, let $\Sigma(P \times Q)$ be the money volume of expenditures by consumers on finished consumers' goods and services, including houses.[6] When these various terms are themselves constant, when there is no new saving, investment, or similar change or when such changes offset one another, and when various classes of "financial" transactions are omitted[7]—then in the given period

$$M \times C = NI = \Sigma(P \times Q) . \qquad (1)$$

[5] Corporate earnings received by the corporation but not yet distributed to owners or creditors or transferred to earned surplus are not included. If such earnings are used to pay off loans or the like, new saving is involved (see Sec. V [1], below). Income accrued but not yet received in cash, as in the case of interest earnings between payment dates, is likewise excluded. Note also that NI relates only to actual payments of money to individuals or their agents as income, regardless of whether depreciation, amortization charges, etc., have been correctly allowed for. Keynes's "user cost" is relevant to the business man's computation of his own equity income but not (other things equal) to the direct effects of the income payments when once they are made.

In most cases national money income as thus defined equals value of output sold for money (cf. Keynes's *General Theory*, p. 63). But there are not unimportant instances in which this equality breaks down, as when a government pays a bounty to individuals from newly created money, and the receipts are counted by them as income (see below). Other points of disagreement with Keynes's three equations (*op. cit.*) will also be indicated later.

[6] Purchases of previously utilized land, when possession of the land is viewed as command over space, are excluded. The treatment of purchases of such land depends on what the seller does with the proceeds (see Sec. V [6], below). These purchases are analogous to purchases of previously issued securities. But outlays made to utilize untouched new land for the first time, as to clear land on the frontier or to fill in swamps, can be regarded as purchases of new producers' goods and should be counted (after subtraction of the value of usable by-products such as timber) as new investment. Since land in its spatial aspect is not consumed by being used, it is not a consumers' good comparable to other consumers' goods. The total quantity of utilized land is a part of the capital of the society, counted at an original value equal to the original cost of making the land usable (less value of by-products). In modern societies the outlays currently incurred to make land usable for the first time are small relative to the total of transactions in land. Outlays to improve previously utilized land, as by adding fertilizers, should be treated like other outlays on producers' goods.

[7] The exclusions cover those transactions in titles, claims, rights, etc., which are not themselves a part of, or do not arise from, the forward movement of goods and services from the input of natural resources and human effort to the final sale of

Two other preliminary equations should also be given. Let b be the percentage of the money stock currently held in "idle" balances.[8] Let d be the average circular velocity of the "active" part of the money stock, or of that part which is not currently held in idle balances. The term d is in largest part a reciprocal measure of the length of the average interval between successive outpayments by individuals and business firms and of the degree of overlapping between the several payment schedules. Since the velocity of that part of the aggregate money stock which is held in idle balances is of course zero, the average circular velocity of the aggregate money stock itself is

$$C = (1 - b) \times d . \tag{2}$$

The right-hand member of this expression can be substituted for C in equation (1).

Finally, let B be the absolute size of the idle balances of money. Then the size of the remaining "active" part of the money stock can be expressed either as $M \times (1 - b)$ or as $(M - B)$. Using the latter form, in place of equation (1) we can write

$$(M - B) \times d = NI = \Sigma(P \times Q) . \tag{3}$$

This is the form of the basic equation which is chiefly used in the present paper.

---

finished consumers' or producers' goods. The largest category is dealings in previously issued securities and previously utilized land. Certain speculative commodity transactions should also be excluded. But purchases of newly issued securities in connection with the financing of new investment as defined below are not excluded, nor are outlays to open up new land. Statistical allowance does not have to be made for interbank transactions (which should also be excluded) because assets owned by banks are not counted as "money" and because interbank transactions do not get into the 141-center bank debits series used in these studies.

[8] See my article on "Components." An "idle" balance is any sum of money which is held unspent, after its receipt, longer than what is for the recipient individual or business firm one habitual or normal maximum income-expenditure period. If an individual's receipts come in daily, while his outpayments to others are made weekly (or conversely), then, with a complete overlapping of payment schedules, this individual's maximum income-expenditure period is one week. Unless he is saving or hoarding and thus accumulating idle balances, no unit of money received as income stays in his possession more than one week. For any one individual or firm this maximum period may not remain constant over time, but the limited evidence available suggests that for the country as a whole it is usually fairly stable.

Any part of the money stock which at a given moment is tied up in the excluded classes of "financial" transactions should be counted with these idle balances.

II. THE CIRCULAR MOVEMENT OF MONEY UNDER STABLE CONDITIONS

The main purpose of the present paper, as already stated, is to examine the effects of changes in the terms of the preceding equations. These effects, however, consist in the first instance of changes in the great flows of money payments to and from individuals. In order to understand the problems of change, it is therefore first necessary to give a more detailed picture than before of the flows of money payments when general conditions are stable, and particularly of the essentially circular movement of money itself. This can be done in terms of a rather brief illustration.

To make the illustration itself reasonably simple and understandable certain assumptions will be set up, which can be removed later without impairing the main argument. First, suppose that only one production and exchange process in the society is conducted with money, and suppose that it turns out only one kind of consumers' goods, say, shoes. Let the flow of finished shoes to consumers be continuous and of unchanging money volume. Second, suppose that there are six different stages or levels in this production process: say, the consumer himself, the retailer, the wholesaler, the fabricator of shoes, the maker of semifinished products, and the producer of raw materials. To keep the illustration simple, we may also assume for the moment that equipment is immortal, so that there are no outlays for repairs or replacements. Third, suppose that the average time interval required for money payments to pass through any one of these stages or levels is the same as for every other stage. We may describe the latter time intervals as the average "income-expenditure" periods for each stage (consumer stage, retailer stage, etc.). They are the average lengths of time elapsing in each stage between the receipt of a given block of money, whether as individual income or as business receipts, and its expenditure. Fourth, suppose that each of the successive fabricating and distributing stages pays out an equal amount of money, per unit of time, to the recipients of individual money incomes (who are also the consumers as a whole) in the form of wages, salaries, interest, profits, etc. In the present example, with five fabricating and distributing

stages (excluding the consumer), one-fifth of the total volume of individual incomes thus received from the production and distribution of shoes, in each time period, is paid out to individuals by each of the fabricating and distributing stages. Finally, suppose that there are no "idle" balances of money. Each instalment of individual income or of business receipts is then spent again by the recipient at the end of what is, for that individual or enterprise, one habitual or normal maximum income-expenditure period.[9] That is, all the money stock is "active." In the preceding equations, b and B are then zero, and C equals d.

When a consumer buys a finished pair of shoes, assume that he pays the full price at once to the retailer. For the moment, we may take this act as the starting-point in the flow of money payments. Then the retailer, in turn, pays out all this money. Part of the money goes to the wholesaler in payment for finished shoes required by the retailer to replenish his own stock, while part of it goes to individuals as individual money incomes (including the retailer's profits) in payment for services, etc., which the retailer himself has already obtained. At the end of one average income-expenditure period the retailer has paid out in these two ways all the money he originally received from the consumer. For convenience, suppose that he makes these payments in a lump at the end of this first income-expenditure period. Under the present assumption of equal outpayments to individuals by each stage per unit of time, and with five stages other than the consumer's, the retailer therefore pays out to individuals (including himself) one-fifth of the original price he received for the shoes but pays the other four-fifths to the wholesaler. The wholesaler thus receives four-fifths of the original price. At the end of the next income-expenditure period the wholesaler, in turn, pays out one of these four fifths to individuals for services rendered (paying the same number of dollars that the retailer paid at the end of the first period) and pays out the remaining three fifths to the fabricator to replenish his own stocks. Similarly, the fabricator, at the end of the next (third) period, pays one of the three fifths he receives to individuals and pays the other two fifths to the maker of semi-

[9] On this see my article on "Components."

finished products. At the end of the next period the latter pays one of the two fifths he receives to individuals and one fifth to the producer of raw materials. Finally, we may suppose for the moment that the raw material producer's costs of production consist only of payments for services. At the end of the next period, which is the fifth, this producer therefore pays out to individuals all of that fifth, of the consumer's original outlay on shoes, which he had received from the maker of semifinished products.

Thus, at the end of five average income-expenditure periods, every cent originally paid to the retailer by the consumer for his shoes has been returned to consumers in the aggregate in the form of individual incomes.

In a going society, however, this is far from the whole story. The individuals who receive money income from the retailer, for example, do not simply hold it: we have assumed that there are no idle balances of money. Instead, at the end of what is for them one average income-expenditure period subsequent to the receipt of this block of income, they spend the income again on more consumers' goods—these goods being here still shoes, since we have assumed that shoes are the only goods produced for money. This block of money hence starts on a second payment circle. Similarly, the individuals who receive money incomes from the wholesaler spend them again on shoes at the end of one income-expenditure period, and this batch of money, too, starts on a second payment circle. So likewise for the batches of income paid to individuals by the other fabricators and distributors in the aggregate process.

Now what we need to know, in order to determine the average circular velocity of the money stock, is the average length of time required by the average unit of money to traverse an average circle of payments—the circle running from the consumer through an average fraction of the aggregate production and exchange process and back to individual consumers as a whole. Some units of money traverse one such circle of payments quickly. Some money which is paid to retailers by the consumer at the end of one income-expenditure period after its receipt by the consumer himself is paid back to individuals by the retailer (say, as wages) at

the end of only one more income-expenditure period. This particular batch of money hence traverses a complete payment circle —from individual income back to individual income—in a time span of only two income-expenditure periods. At the other extreme, some money goes through the whole production process down to the raw-material producer before being paid out to individuals as income. In the present case this latter block of money requires six income-expenditure periods to traverse one complete payment circle. The length of time required by an average unit of money to complete one payment circle of average length lies, under the present assumptions, midway between these extremes. In the present case different units of money paid out at a given time by consumers require two, three, four, five, and six income-expenditure periods, respectively, to complete one payment circle and thus return to individual incomes. The average number of periods required is hence 20/5, or four. To generalize, the average circular velocity of the average unit of active money per unit of time (say, a year) is simply the average number of income-expenditure periods which elapse in a year divided by the average number of such periods which elapse while the average unit of money traverses one average payment circle. In the present case the latter divisor is four.[10]

Now let the average number of stages or levels through which the average unit of active money passes in traversing one average payment circle—which is clearly also the number of times it changes hands in traversing this average circle—be L. It will be

[10] The channels of this somewhat complex flow of money payments can be depicted graphically by drawing a nest of circles, of progressively greater diameters, which are all tangent at one point and which all lie on the same side of the point of tangency. Let this point represent receipts of income by individuals. The smallest circle is the consumer-retailer-consumer circle of payments, with one point marked on the opposite side from the consumer to indicate the retailer's receipt of business income. This circle, hence, consists of only two stages and two income-expenditure periods. The next larger circle is the consumer-retailer-wholesaler-consumer circle of payments, with three income-expenditure periods marked off, etc. There are as many payment circles as there are stages in the aggregate production and exchange process proper, excluding the consumer. Under the present assumptions the consumer, in effect, pays equal fractions of his total outlays into each circle. The average circle of payments, through which the average unit of money moves, is the middle circle in the array.

recalled that the number of complete payment circles traversed by the average unit of money per unit time period, or its average circular velocity, is d. Hence, the length of time required by an average unit of money to traverse an average circle of payments is $1/d$, and the length of time required to traverse any one stage or level in the circle is necessarily $1/(d \times L)$. This last is also, of course, the length of the average income-expenditure period itself under the preceding definitions.[11]

These conclusions are obtained on the assumptions that there is only one production process, and that there are no idle balances of money. Clearly, however, they also apply as averages when there is any number of production processes. The terms d and L then become weighted averages of the several average values of these terms in each process taken separately. If idle balances of money exist, on the other hand, the foregoing analysis of the circular movement of money is relevant only to the nonidle or "active" part of the money stock. Under such conditions, as previously remarked, the circular velocity (C) of the aggregate money stock is an average of two velocities, one of which is zero (see eq. 2, above). The concept and the numerical value of the number of stages per average payment circle, however, are not affected by the appearance of idle balances, nor is the expression for the length of the average income-expenditure period.

[11] Also, let the total number of stages in the largest payment circle, including the consumer himself, be n. This is the number of stages traversed by those units of money which pass from consumers through the whole production process to, say, raw-material extractors before being returned to consumers as individual incomes. But the number of stages in the smallest payment circle, running from the consumers only to retailers and then back to consumers, is 2. Hence the value of L, the number of stages in the average payment circle, is $(n + 2)/2$, or $(n/2) + 1$. Or, n equals $(2L - 2)$. In the preceding illustration the value of L was 4, and of n, hence, 6. This definition of terms is somewhat different from that used in my article in the *Quarterly Journal* for November, 1933.

This determination of n is not correct in those cases where the producer of a consumer's good has no money costs of production other than the costs of keeping himself alive, as with most domestic service, and where the producer hence buys only consumers' goods. Here money is exchanged only once in passing from individual income back to individual income; and here the value of n is only $2L - 1$. The relative importance of these cases is not great enough to make the preceding general expression for n seriously inaccurate for the country as a whole. Hence a more refined expression is not needed.

In actual societies the situation is still more complicated. Money payments are made to makers of equipment, to lenders and landlords, and to many other groups besides those listed in the preceding illustration. But the analysis and equations presented above still hold good with respect to the average length of time required by the average unit of money to traverse one average circle of payments, and with respect to the determining factors involved, when these alternative uses of money are given their proper weight in the establishment of the average. When consumers' incomes are being spent currently on new investment goods as well as on consumers' goods, the terms C, d, and L become averages of the values of these terms in the several processes making and distributing consumers' and new investment goods, respectively. But the general form of the preceding analysis and equations remains unchanged.[12]

As remarked above, certain classes of "financial" transactions are not included in these equations. The money tied up in such operations at any moment, however, forms part of the idle balances (B), while the money payments involved do not get into the equations at all. The existence of these classes of transactions therefore causes the equations to apply to something less than the totality of all money-using transactions, but it does not affect the validity of the equations themselves.

III. CHANGES IN THE QUANTITY OF MONEY: THE CASE OF A GOVERNMENT BOUNTY—THE ANALYSIS OF LAGS

The movement of money through those payments which arise out of the production and exchange of goods and services, out of the distribution of individual incomes from these processes, and out of the expenditure of the incomes on additional goods and services is thus essentially circular. With this circular movement in mind, it is not difficult to develop an analysis of the effects of changes in the several terms of the equations given in Section I.

Suppose, first, that the government prints a limited amount of

[12] The effect of expenditures on new producers' goods, whether for replacement or for new investment, is examined at the end of the next section and in Sec. V (6). It is there shown that the introduction of these expenditures does not alter the main conclusions of the preceding analysis.

additional paper money which it distributes in equal amounts to all individual consumers in the country as a bounty. What effects will the new money have?

To answer this question, it is easiest to begin with the case discussed in the preceding section. Assume again that there is only one money-using production and exchange process in the society and that this process consists altogether of six stages or levels running from the consumer to the raw-material producer or extractor. Then the value of n is 6, as before, and of L is 4. Also suppose again that there are no idle balances of money, so that B and b are zero, and C equal to d; that there is no new saving or investment; and that equipment is immortal. The latter assumption permits avoidance, for the moment, of the complications arising over payments to makers of equipment. Further, assume that it takes an equal amount of time for each unit of money to traverse each stage or level of production and exchange, this length of time being $1/(d \times L)$. Assume that the various income-expenditure periods are not only equal in length but are also synchronous and that all payments are made at the ends of such periods. Then, at the end of any one period (a point in time which is also the beginning of the next following period), the consumers pay over previously received income to the retailers; at the same moment the retailers pay over previously received business income to the consumers and to the wholesalers; and so on through the whole production process to the raw-material extractor. Finally, assume that when consumers pay a given block of money to retailers for finished consumers' goods received, and when the retailers, wholesalers, and other producers later successively return parts of this money to consumers in the aggregate as individual incomes, the outpayments to individuals from each such stage of production and distribution are equal fractions of the block of money originally paid by consumers.

That is, with a total of six stages including the consumer, if the consumer pays $5.00 to the retailers today, at the end of the next income-expenditure period the retailers turn over $1.00 to consumers in the aggregate, as individual incomes paid them in return for services rendered, and turn over $4.00 to the whole-

salers; at the end of the second period the wholesalers pay $1.00 of these receipts to consumers and $3.00 to the fabricator of manufactured goods; and so on to the raw-material extractors, who at the end of the fifth period pay to the consumers all of the $1.00 they had previously received. These somewhat rigid assumptions, which were discussed at greater length in the preceding section, can be removed later without altering the substance of the argument.

Now let the government print additional paper money in the amount of $20.00 which it gives as an equal bounty to all individual consumers. The national money income, under most definitions of that term, is hence increased at once by $20.00 in the income-expenditure period during which the bounty is paid. Expenditures on finished consumers' goods and services—the $\Sigma(P \times Q)$ term—remain unchanged, however, in this first period. There is no reason to think that receipt of a small bounty will materially alter the payment habits of the society. On the average, the recipients will hence wait until one average income-expenditure period has elapsed before spending the additional income. But in the second income-expenditure period the consumers will spend all of the $20.00 on finished consumers' goods and services.[13] Since we have assumed that there are no new investments and no idle balances, this is the only use that can be made of the additional income. That is, in this second period the $\Sigma(P \times Q)$ term rises by $20.00. On the other hand, however, in this second period the national money income (NI) drops back to the level prevailing before the bounty was paid. None of the new money has yet had time to go around even the shortest payment circle and thus to appear a second time in the national money income.

In the third income-expenditure period the $\Sigma(P \times Q)$ term, in turn, drops back to the level prevailing before the bounty was paid. The value of this term in any period is always equal, under the present assumptions, to the value of the NI term in the pre-

[13] Whether this increase in the money volume of outlays on consumers' goods causes a rise in prices, or a reduction in inventories, or an increase in the physical volume of production all along the line is immaterial for present purposes.

ceding period, and in the here-preceding or second period the *NI* term had reverted to the prebounty level. But in this third period the *NI* term is itself increased by $4.00 above the prebounty level, as follows. The retailers' receipts, which are themselves the $\Sigma(P \times Q)$ term, had been increased by $20.00 in the second period, as already shown. In the next-following or third period the retailers pay some of these receipts to the wholesalers, but also pay some to individual consumers in the aggregate, for services rendered, etc. Under the present assumptions, with five production and distribution stages (excluding the consumers' stage) and with equal outpayments to consumers by each stage of given blocks of money previously received from consumers, in the third period the retailers thus pay to consumers as individual incomes one-fifth of their business receipts of the preceding or second period. Since the increase in their receipts in the second period was $20.00, the increase in their payments of income to individuals in the third period is one-fifth of this, or $4.00. This part of the bounty originally paid to consumers by the government has now traversed one complete payment circle—the shortest one possible—and thus enters the national money income a second time. In this third period, also, the retailers pay to the wholesalers the remainder of their second-period receipts, or $16.00.

In the fourth period the wholesaler similarly pays $4.00 to consumers out of his third-period receipts of $16.00, or one-fourth thereof, and pays $12.00 to the fabricator of manufactured goods. In the fifth period the latter fabricator pays $4.00 to consumers out of his fourth-period receipts of $12.00, or one-third thereof, and pays $8.00 to the maker of semifinished goods (we continue to assume that equipment is immortal). In the sixth period the latter maker pays $4.00 to consumers out of his fifth-period receipts of $8.00, or one-half thereof, and pays $4.00 to the extractor of raw materials. In the seventh period the latter extractor pays to consumers all of his sixth-period receipts of $4.00. With this payment by the extractor of raw materials, the last part of the original bounty of $20.00 has completed one full payment circle and thus enters the national money income a second time.

In the fifth and later periods, however, the national money in-

come is increased by more than merely the effects of the first spending of the proceeds of the original bounty. In the third income-expenditure period, as already shown, the *NI* term was higher than the prebounty level by $4.00. This increase produced an equal rise in the $\Sigma(P \times Q)$ term in the next, or fourth, period. As already remarked, under the present assumptions the latter term in a given period is always equal to the *NI* term in the preceding period. This fourth-period increase of $4.00 in the $\Sigma(P \times Q)$ term, which is also retailers' receipts, means that in the fifth period retailers pay out again one-fifth of the increase, or $0.80, to consumers as individual incomes. The total fifth-period rise in the *NI* term, relative to its prebounty level, is hence the sum of the $4.00 increase previously discussed and this secondary increase of $0.80, or a total of $4.80. Thus a second though smaller wave of effects produced by the original bounty gets under way. In the sixth period the secondary wave reaches the wholesalers, who pay to consumers $0.80 of the fifth-period increase of $3.20 in their receipts; and so on down the whole production process to the raw-material extractor. Nor is this all. The secondary wave just described was started by the secondary increase in the national money income which appeared in the third period. Another wave of effects is started by the secondary increase in the national money income in the fourth period, described above; another by its secondary increase in the fifth period; etc.

Thus the payment of a bounty such as is here assumed sets in motion not only the first main wave of direct effects but also a series of successive and overlapping secondary waves. For a time this overlapping has the consequence of making both the national money income and the $\Sigma(P \times Q)$ term become progressively larger. But by the end of the sixth income-expenditure period following the original payment of the bounty, in the present case, the expansion virtually ceases. By that time, as will be made clearer in a moment, the first impact wave of effects has disappeared, and what is left is the combined effects of the overlapping secondary waves. These combined secondary effects are of fairly constant magnitude. After the end of the sixth income-expenditure period, the national money income (*NI*) and the $\Sigma(P \times Q)$

term both fluctuate somewhat because of inequalities in the sizes of the successive secondary waves. But they fluctuate around levels which are roughly $5.00 higher, in each income-expenditure period, than in the era before the government bounty was originally granted.

TABLE 1

INCREASES IN RECEIPTS BY THE SEVERAL GROUPS, IN SUCCESSIVE INCOME-EXPENDITURE PERIODS, DUE TO AN INITIAL GOVERNMENT BOUNTY OF $20

PRODUCTION GROUPS, OR PAYMENT STAGES	PAYMENTS MADE TO CONSUMERS BY EACH GROUP, AT END OF EACH PERIOD, EXPRESSED AS A FRACTION OF THE RECEIPTS OF EACH GROUP	INCREASES IN RECEIPTS IN INDICATED INCOME-EXPENDITURE PERIODS*									
		1	2	3	4	5	6	7	8	9	10
1. Consumers ($=NI$).....	0	20	0	4	4	4.80	5.60	6.56	3.68	4.992	4.928
2. Retailers ($=\Sigma P \times Q$)....	1/5	0	20	0	4	4.00	4.80	5.60	6.56	3.680	4.992
3. Wholesalers.....	1/4	0	0	16	0	3.20	3.20	3.84	4.48	5.248	2.944
4. Fabricator of manufactured goods.....	1/3	0	0	0	12	0.00	2.40	2.40	2.88	3.360	3.936
5. Maker of half-products.....	1/2	0	0	0	0	8.00	0.00	1.60	1.60	1.920	2.240
6. Extractor of raw materials.....	1	0	0	0	0	0.00	4.00	0.00	0.80	0.800	0.960

* Increases are measured relative to the pre-bounty levels of receipts.

These latter complex relations and effects are difficult to describe verbally. They are made more understandable by Table 1, which gives a compact numerical illustration of the case we have been dealing with for the first ten income-expenditure periods.[14] In this table each value in line 2—the $\Sigma(P \times Q)$ term—is the

[14] Cf. Robertson's analysis of the saving process, in the *Economic Journal* for 1933, and also his table showing some of the effects of new investment in the *Quarterly Journal of Economics* for November, 1936, p. 173. The latter table, dealing with a series of doses of new investment, makes impossible a study of the secondary effects of any one dose. It therefore does not yield comprehensive formulations of the relations involved.

value of line 1—the *NI* term—in the preceding period. The values of line 3 are four-fifths those of line 2 in the preceding period; the values of line 4 are three-quarters those of line 3 in the preceding period; the values of line 5 are two-thirds those of line 4 in the preceding period; and the values of line 6 are one-half those of line 5 in the preceding period. In line 1, giving the national money income, the first value shown is the new bounty of $20.00. Thereafter, the values of line 1 in each period are the sum of the following values in each preceding period: one-fifth of line 2, one-fourth of line 3, one-third of line 4, one-half of line 5, and all of line 6.

TABLE 2

SUMMATIONS OF INCREASES IN RECEIPTS BY GROUPS OF INCOME-EXPENDITURE PERIODS

	Total Increase in		Excess of *NI* over $\Sigma(P \times Q)$
	NI	$\Sigma(P \times Q)$	
Income-expenditure periods:			
1–2	20.000	20.000	0.000
3–6	18.400	12.800	+5.600
7–10	20.160	20.832	−0.672
11–14	20.111	20.264	−0.153
15–18	20.091	19.860	+0.231
Total excess of *NI* over $\Sigma(P \times Q)$			+5.006
Excess unaccounted for (see text preceding equation 7 below)			+0.006

Table 1 thus gives a clear picture of the unfolding effects of an increase in the flow of money payments, both through time and through the several stages of the aggregate production and exchange process. It also gives a picture of the various circles of payments, some short and some long, through which any one block of money moves when it is originally paid out by consumers to retailers in return for finished consumers' goods, and as it passes to other distributors and producers and from them back to consumers as individual incomes.

The additional figures in Table 2 summarize the effects of the

government bounty in increasing the national money income and the total money volume of expenditures on consumers' goods, relative to the prebounty level, over a span of time somewhat longer than that shown in Table 1. Beginning with the third income-expenditure period, the figures show the sum of the increases for groups of four periods.

These figures and the antecedent argument permit us to establish certain general relations of major importance. First, in this particular case it is true by hypothesis that the government bounty increases the stock of money dollar for dollar. Let this government bounty, paid out of additional new money, be Z. Let Δ represent finite increments, in absolute amounts. Then

$$\Delta M = Z . \tag{4}$$

Second, since the new bounty is paid directly to consumers and enters their individual incomes at once, what we may call the "initial-impact lag" of NI behind the payment of the bounty is zero. The new income is not spent on consumers' goods until after the lapse of one average income-expenditure period, however, and the initial-impact lag of $\Sigma(P \times Q)$ is, hence, one such period, or an amount of time measured by $1/(d \times L)$. Moreover, what is of greater importance, from Tables 1 and 2 it is clear that in the present case not less than six income-expenditure periods elapse between the receipt of the government bounty and the time when the NI term ceases to expand and becomes approximately stabilized (despite fluctuations between one period and the next) at the new higher level produced by the bounty itself. This number, six, is also the number of payment stages or groups, n, in the aggregate production and exchange process. In other words, until every group has felt the initial-impact effects of the bounty it is impossible for stability to be restored to the national money income; until that time, the national income increases on the whole, but irregularly. This conclusion is both plausible on a priori grounds and substantially borne out by the preceding numerical illustration. To generalize, the lag in the full adjustment of the national money income to the effects of the new bounty, if this bounty is paid in one lump at a given moment in time, is n in-

come-expenditure periods. The lag in the full adjustment of the $\Sigma(P \times Q)$ term is one additional period. That is

$$\text{Total lag } (NI) = \frac{n}{d \times L}; \qquad \text{Total lag } (P \times Q) = \frac{n+1}{d \times L}. \quad (5)$$

Third, after this initial-impact or transitional period is over, the national money income and the total money volume of expenditures on consumers' goods are once more approximately equal and fairly stable, as shown in the tables,[15] but are substantially larger than before. In the present case the sum of the increases amounts to $20.00 in every span of four income-expenditure periods. Now it will be recalled that in the present case the value of L is also 4. That is, the average unit of money here traverses four stages or groups in completing the average circle, of consumer-producer-consumer payments. Or, what is the same thing stated another way, the average unit of money requires a length of time equal to four income-expenditure periods to complete one average circle of payments. Therefore, although the effects are actually diffused and somewhat irregular, after the transitional adjustments are accomplished the new government bounty produces an enduring increase in the national income which is equal in size, per unit of time, to the increase which it would produce if it entered this income in a single lump once every time that an average unit of money completes one average circle of payments—provided that there were no "secondary" increases in the national income. This is, indeed, a plausible conclusion, for it implies merely that the society uses the new money in the same ways, and with the same average circular velocity, that it used the previously existing stock of money.

Now the circular velocity of an average unit of active money is d, as shown in Section I, and the time required by this average unit of money to complete one average circle of payments is, hence, $1/d$, in fractions of the unit time period. This length of time, as

[15] The slight actual instability shown in the tables is due to the fact that the changes here in question are not perfectly continuous. Their discreteness makes for small fluctuations. These fluctuations substantially cancel out over time but seemingly do not wholly disappear; they create small but persisting cycles of maladjustment.

previously shown, is also equal to the sum of L income-expenditure periods, since the average unit of money changes hands L times in passing around one average circle of payments: $L \times [1/(d \times L)]$ equals $1/d$. In the present case, if we compare the situation in unit time periods ensuing after the transitional adjustments are effected with the situation prevailing before the bounty was granted, and assume that d remains constant, we therefore find that the net enduring changes can be expressed as follows (cf. eq. 3; ΔB is here zero):[16]

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = Z \times d\,. \qquad (6)$$

Finally, during the transitional period itself NI is substantially larger than $\Sigma(P \times Q)$. On examination of Tables 1 and 2 the excess proves to be roughly \$5.00 for the transitional period as a whole. The slight actual discrepancy between this sum and the figure shown in Table 1 for the first six income-expenditure periods virtually disappears in subsequent periods. After eighteen such periods have elapsed, the discrepancy amounts to only \$0.006. The enduring excess of NI over $\Sigma(P \times Q)$, which amounts to substantially \$5.00 and most of which appears in the transition period alone, is equal to the amount of the new bounty, or \$20.00, divided by 4—which is here the value of L. Although the actual working-out of the results is more complex, during the transition period the end effect is therefore the same as though the bounty, instead of being paid in one sum, had been paid in four instalments over four income-expenditure periods—the time here required by the average unit of money to complete one average circle of payments—and as though the consequent increases

[16] This equation and Tables 1 and 2 give a picture of the mechanics and the end effects of such changes which is rather different from that offered by Kahn, Keynes, and others. The point will be considered again later. The period denoted by $1/d$ is evidently much the same as the "circulation period" which Robertson designates by K (*Economic Journal*, 1933, p. 409). Contrary to Robertson's view (*ibid.*, p. 413), I think that "simple algebraic equations" can be applied to any one change in the income flow.

Note that the "secondary" increase in employment and in the national money income here amounts to $Z \times (d - 1)$ in the unit time period when the bounty is granted but that, in subsequent time periods, all of the increase, or $Z \times d$, is "secondary."

in expenditures on consumers' goods had lagged behind the increases in the national money income, in each case, by one income-expenditure period. Had this actually happened, and had the secondary changes been continuous instead of discrete, the NI term for four such periods as a whole would have been precisely $5.00 larger than the $\Sigma(P \times Q)$ term. This conclusion, too, is plausible and is consistent with the picture of the final adjustments given by the preceding equation. Disregarding the minor effects of the discreteness of the secondary changes, we therefore have for the transitional period itself as a whole the following expression. (Again cf. eq. 3; B is here zero, and d and L are assumed constant. The subscript $_t$ should be taken to indicate that the several terms are averages or accumulations, respectively, for the transition period as a whole—which may be either larger or smaller than the unit time period postulated in Section I. When written without the subscript, NI and $\Sigma(P \times Q)$ are quantities per unit time period—i.e., they are rates.)[17]

$$(M_t - B_t) \times d = NI_t = \Sigma(P \times Q)_t + \frac{Z_t}{L_t}. \qquad (7)$$

In the case we have hitherto been considering, the additional new paper money issued by the government was paid directly to individual consumers as a bounty. In this case the lags involved are at a minimum. Now suppose, instead, that the government pays a similar bounty to the retailers, who treat it not as individual income but as part of their business receipts. Then the principal preceding equations (4, 6, and 7) remain valid,[18] as do the numerical illustrations. In terms of Table 1, the sequence of changes now begins with payments made by the retailer (l. 2 in the table, at the end of period 2) and proceeds from that point as before. But the expression for the lags is no longer correct.

[17] M_t is the average quantity of money outstanding in the period. This expression is not accurate when the unit time period selected is shorter than the time required for the transitional adjustments to be completed. But the problems peculiar to such short periods are ordinarily not important.

[18] But, in computing the average value of M_t in eq. (7), the increase in M must strictly not be counted until this new money enters the national money income for the first time.

The lags involved are now at a maximum. Five income-expenditure periods, or $(n - 1)$ such periods, will now elapse before all the new money originally paid to the retailers as a bounty first enters the national money income, and six will elapse before all of it is spent for the first time on finished consumers' goods. Still further delays, shown by equation (5), will then appear before the final adjustment of the NI and $\Sigma(P \times Q)$ terms to their new levels is effected. But these latter lags are not very important here, since the initial-impact increase in both terms is \$4.00 per income-expenditure period and the final increase only \$5.00.

The lags with respect to bounties granted to other distributors and producers fall between the two extremes just considered. The smaller the number of stages the new money has to traverse before all of it enters for the first time into the national money income, the shorter is the initial-impact lag. The second part of the total lag, however—the part which is due to delay in the propagation of the secondary waves of effects, and which is shown by equation (5) above—is the same in all cases. The shorter the initial-impact lag, the greater is the quantitative effect of this secondary lag in delaying the final adjustment of NI and $\Sigma(P \times Q)$ to their new sizes. We may express the lags for the national money income as follows, after substituting $(2L - 2)$ for n (see the preceding section). The lags for $\Sigma(P \times Q)$ are greater than these lags by $1/(d \times L)$.

$$\left.\begin{aligned} &a)\ \text{Initial-impact lag } (NI)\text{: Maximum} = \frac{2}{d} - \frac{3}{d \times L}\ ; \\ &\qquad\qquad\qquad\qquad \text{Average} = \frac{1}{d} - \frac{3}{2d \times L}\ . \\ &b)\ \text{Total lag } (NI)\text{: Maximum} = \frac{4}{d} - \frac{5}{d \times L}\ ; \\ &\qquad\qquad\qquad\qquad \text{Average} = \frac{3}{d} - \frac{7}{2d \times L}\ . \end{aligned}\right\} \quad (8)$$

These lags are substantial. If we take d at its apparent average value in 1909–32 of about 3.8 per year and take L at 11 (illustrative values which for reasons too lengthy to present here seem plausible), the average initial-impact lag is about 2.7 months, and

the average total lag about 8.5 months. The maximum lags are about 3 months longer in each case. The quantitative effect of the lags becomes unimportant, however, if the change in the quantity of money takes place in a series of small doses spread over some time—say, a year or more.

It is worth emphasizing that the point in the aggregate production and exchange process at which the new money is injected influences the size of these lags but has no bearing on the size of the final effects produced by the money itself. Thus a government bounty to consumers produces a more rapid increase in the national money income, other things equal, than does a bounty or a loan to merchants or manufacturers, but it does not produce a greater increase. The end effects on the national money income will be precisely the same in the two cases, other things equal, so far as monetary factors alone are concerned.

One other point should also be emphasized. In the preceding numerical illustrations it was assumed, for simplicity in presentation, that equipment is immortal. The introduction of one or more additional stages into the flow of payments to represent the makers of new equipment, however, as is necessary in depicting actual conditions, does not affect the preceding argument in any way. Part of a given block of money paid by consumers for finished consumers' goods will now flow through the chain of payments running from consumers through distributors to the fabricators and raw-material extractors; will be paid over by the latter groups to equipment-makers; and will be paid by these makers partly to individuals as individual income, partly to other producers and raw-material extractors—who in turn pay part of their receipts to individuals as income.

In particular cases a particular block of money may be exchanged between business firms a large number of times before being paid out to individuals as income. This is true, whether equipment is being currently purchased or not. As the number of exchanges between firms which a given block of money carries increases, however, before the money returns to individuals as income, the size of the block of money itself shrinks, for at each exchange of goods in the aggregate production and distribution

process, payments of income to individuals are also split off. It is conceivable, of course, that by accident certain units of money may remain permanently in the interbusiness firm nexus of payments. But the terms L and n are themselves weighted averages of the varying number of stages which each unit of money traverses in passing from individual income back to individual income, the stages being weighted by the relative size of the total payments which each stage makes per unit of time. It follows that, if any units of money do in fact chance to remain permanently in the interbusiness firm nexus of payments, the weights attached to the payments effected by these particular units of money are likely to become progressively smaller, and that the effects of these units on the general average values of L and n are hence likely to become negligible. The average situation can therefore be presumed to be depicted with sufficient accuracy by the preceding analysis and equations.[19]

IV. CHANGES IN "IDLE" BALANCES; IN THE d TERM

The preceding analysis of the effects of an increase in the quantity of money involved certain other assumptions which were used to simplify the first broad description. These assumptions may now be removed; the substantive argument and conclusions remain unchanged.

The most important assumption has been that there are no "idle" balances of money. In other words, we have hitherto supposed that individuals and business firms spend each instalment of their individual incomes or their business receipts at an interval after the receipt thereof not greater than what is, for each recipient, one normal or habitual maximum income-expenditure period.[20] Any instalment which is held unspent for more than one such period becomes, until spent, an idle balance. How does the introduction of these idle balances affect the preceding analysis of the effects of increases in the quantity of money?

[19] Also, the use of bank deposits and the consequent fusion of specific units of "money" into large aggregates which cannot be resolved intelligibly makes any discussion of the paths of individual units of money rather futile beyond a limited point. It is only possible to deal, on any comprehensive scale, with the average movements and speeds of large masses of money.

[20] See n. 8, above.

If the situation can be analyzed in definite terms at all—which may not be the case—we have only three main alternatives to choose from. First, all the newly created money issued in the form of a government bounty may flow at once into idle balances. In that event the increase in M in the preceding equations is offset by an equal increase in B; the quantity of "active" money $(M - B)$ remains unchanged; and the average circular velocity C of the aggregate money stock falls[21] as M rises. In consequence, here there will be no permanent alteration at all in the NI or the $\Sigma(P \times Q)$ terms. In effect, the increase in the money stock is offset by new saving, hoarding, etc. In equations (4), (6), and (7) the positive Z term, representing the new bounty, is canceled by a negative term which we are not yet ready to introduce. Second, it may happen that none of the new money flows into idle balances. In that event the quantity of active money increases by the full amount of the increase in the aggregate money stock (M). The equations of the preceding section then remain correct as they are, with ΔB taken as zero and with B_t taken at its value before the new money appeared. The NI and $\Sigma(P \times Q)$ terms ultimately increase by the full amount indicated by $Z \times d$. The value of C rises, since the relative size of the idle balances has declined. Third, some of the new money may drain into idle balances, while most of it goes into active use, in such fashion as to leave the relative size of the idle balances (b) substantially unaltered. This is the "average" case, and also presumably approximates the most probable case, since here the general money-using habits of the people remain substantially unchanged. In this case C is constant, and the quantity of active money increases by something less than the increase in the aggregate quantity of money (M). The positive Z term is partially offset by a smaller negative term representing new saving or hoarding, and the increases in NI and $\Sigma(P \times Q)$ are somewhat smaller than they would be if the new bounty (Z) were operating alone. The preceding equations and the analysis of lags then apply to the net balance of Z minus the negative term.

[21] Because of the increase in the relative size b of the idle balances; see eqs. (2) and (3).

It is clearly impossible to say in advance of the facts, however, what the quantitative effects of an increase in the quantity of money resulting from a government bounty will be in any one case, and there is no guaranty that the "average" case will ever precisely portray the results actually obtained. This is the more conspicuously true because although under some conditions the injection of the new money may induce panic and hoarding, thus resulting in a net decrease in the quantity of active money and in the NI and $\Sigma(P \times Q)$ terms, under other conditions it may stimulate a revival of confidence, a release of funds previously hoarded, and a general expansion more than proportionate to the size of the bounty. The crux of the matter here is clearly the direction and amount of the net change in the quantity of active money $(M - B)$ which accompanies or immediately follows the initial increase in the *aggregate* quantity of money. Depending on the circumstances of the particular case, the multiplication factor which should be applied to the latter increase, in order to obtain the net effects on the national money income, may lie anywhere between d or even higher at one extreme and zero or even a negative value at the other (eq. 6).

A second assumption used in the preceding section was that there is only one money-using production and exchange process in the society. The simultaneous existence of many different and overlapping processes, as in actual societies, and the absence of synchronism in the making of money payments greatly complicate the detail of the analysis but do not alter its substance.[22] The various terms in the preceding equations now become averages or sums of the values in the several processes taken separately, and the same types of relations between the terms prevail.

The last major assumption was that the term d remains constant. This term measures the average circular velocity of the stock of active money. Its size is determined by the character and degree of overlapping of payment schedules, by the lengths of income-expenditure periods, and by other habits and methods

[22] The proposition that introducing a large number of different and nonsynchronous processes does not alter the essential character of monetary relations is elaborated in my paper on "Components."

of organization in the handling of money payments. If d changes, this clearly alters the numerical values obtained from equations (6) and (7) and also requires a modification in the form of the equations themselves. The modification, however, is simple. For the transition-period situation let d_t be the average value of d through this transition period. Then, in equation (7), substitute d_t for d. The previous analysis of lags also applies. With respect to the expression for the net changes after the transitional adjustments are completed, relative to the situation before the given disturbance began, let d_o be the value before the disturbance, and Δd_o the absolute net change in this value which the given disturbance causes or accompanies. Then, in equation (6), substitute $(d_o + \Delta d_o)$ for d.[23] These two substitutions yield the following expressions in place of equations (6) and (7), respectively:

$$(\Delta M - \Delta B) \times (d_o + \Delta d_o) = \Delta NI = \Delta\Sigma(P \times Q) = Z \times (d_o + \Delta d_o)\,. \tag{9}$$

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t + \frac{Z_t}{L_t}\,. \tag{10}$$

The removal of the principal assumptions used in developing the analysis given in preceding sections thus leaves the substance of the analysis itself unchanged.[24] That analysis dealt with the effects of an increase in the aggregate quantity of money produced by a government bounty. The critical determining factors were found to be the net changes in the quantity of active money $(M - B)$ and in the d term; that is, reverting to the concepts of equations (1) and (2), in the aggregate quantity of money and in its average circular velocity. Our next problem is to examine in more detail the other and more common sources and types of oper-

[23] The end effects on NI and $\Sigma(P \times Q)$, of course, are measured by the increment in $(M - B)$ multiplied by the new value of d itself, not multiplied merely by the increment in d.

[24] The term L may also change. This will alter the numerical values of eqs. (8) and (10). The actual changes in L appear to be rather gradual, however (see my *Behavior of Money*, chap. v). Hence special allowance for them need not be made in the form of the transition-period equations. In these equations L can be taken at its average value for, say, the year in question.

ations from which such changes in the purely monetary factors—in the aggregate quantity and the average circular velocity of the money stock—may also come under actual conditions and to discover the varying effects which they may produce. This is, in substance, the problem of the effects on money and on the national money income of new saving, investment, and analogous operations.

V. NEW INDIVIDUAL SAVING, INVESTMENT AND RELATED OPERATIONS, TAKEN SEPARATELY

It follows from the preceding definitions and argument that changes in the national money income cannot take place except in conjunction with net changes in the aggregate quantity or in the average circular velocity of the money stock, or in both. This proposition is an inescapable corollary of the preceding equations. Which set of changes is, in fact, "causal" in a given situation, which is the "real" origin of a given general disturbance, is immaterial. We are here interested primarily in the working of the money-payment mechanism itself, not in the ultimate sources of fluctuations in general economic activity.

It follows further that if we can "explain" either set of changes, in the sense of describing the immediately antecedent phenomena with which that set is most intimately associated and from which it seems proximately to spring, then we can "explain" the other set of changes as well. For a number of reasons, it is convenient to begin with the monetary factors, though it is too obvious to require iteration that the strictly monetary factors and the national money income actually interact with one another in endless sequence.

There are six principal sets of operations, all familiar in the ordinary experience of modern societies, yet differing from one another in important respects, which directly alter the aggregate quantity and the average circular velocity of the money stock. Indeed, it will be shown presently that in a literal sense these operations *are* changes in the aggregate quantity or in the circular velocity of money. The converse is also true: changes in the aggregate quantity or circular velocity of money are one or more of

these operations. The six operations can be described briefly as follows: individual saving, individual dissaving, investment, business hoarding, business dishoarding, and cash bounties to individuals. A case falling under the last category was the one examined in Section III above. We now proceed to define these operations and to examine their effects.

1. *Individual saving* is any abstention from spending a unit of individual income on consumers' goods or services for a period, after receipt of the income, longer than what was previously one habitual or normal maximum income-expenditure period for the recipient.[25] The quantity of the saving is the amount of income which is thus withheld from expenditure on such goods. The income involved, as defined at an earlier point, may be either income actually received by the individual in cash or income received and administered for him by others, as in the case of additions to corporate earned surplus. Capital gains and losses are not included in this income. The purpose for which the saving is undertaken is immaterial to the definition. The purpose may be investment, or the purchase of durable consumers' goods whose unit price is large enough to require prior accumulation of funds, or simple individual hoarding—whether of the panic type, as in this country in 1931–33, or merely to build up contingency reserves.

The act of saving as thus defined may take any one of several forms. The individual may merely accumulate currency or deposits subject to check, which he had previously received as individual income. In this case, if he holds the income longer than his previous normal maximum income-expenditure period, he is

[25] The length of the maximum period may be anything between one and two times the length of the average period previously considered, which is measured by $1 / (d \times L)$. On this see my paper on "Components."

The argument offered in the following pages is analogous in certain essentials to Robertson's familiar analysis (*Economic Journal*, 1933). The "average income-expenditure period" is Robertson's "slice of time." The other similarities and differences need not be examined here.

No attempt will be made to use or even to define the term "forced saving." Even when all existing resources can be supposed to be fully utilized, the meaning of the term may not be entirely clear, while with anything less than full utilization it is definitely ambiguous.

increasing his idle balances. Then the average circular velocity of money falls. Or he may use the saved income to pay off a bank loan. In this case the aggregate quantity of money (M) itself declines by the amount of the saving. Or a corporation in which the individual owns stock may do either of these things with its earnings, thus performing the act of saving on his behalf. Or the corporation may accumulate earnings with a view to plowing them back in the business, thus saving on behalf of its individual owners in order to make later investments for them of this sort. In all these and other possible cases, however, the act of saving entails either a current decrease in the aggregate quantity of money or a current increase in the size of idle balances, or both. That is, it entails a current decrease in the quantity of active money ($M - B$).[26] Let the quantity of the new saving be S. Other changes apart, we then have (cf. eq. 4)

$$\Delta B - \Delta M = S . \tag{11}$$

Under the preceding definitions, other things equal, the act of saving also entails a decline in current expenditures on goods and services in the period when the saving takes place. Not until the lapse of one average income-expenditure period after a given act of saving will the national money income begin to decline, however, and not until after the lags shown in equation (8*b*)—which also apply here—will the full secondary effects on the national money income appear. This can be demonstrated, if desired, by turning back to the numerical illustration given in Section III and by assuming that the figures are all decreases in receipts relative to the presaving period, instead of increases (the illustration should begin with line 2, period 2 in Table 1). In the transition period as a whole the act of saving produces a fall both in the national money income and in the $\Sigma(P \times Q)$ term, but the latter term falls first. When summed for the period as a whole, it is hence smaller than the NI term, just as in the numerical illus-

[26] If "money" is defined to exclude time and savings deposits, as in an earlier section, then a conversion of currency or demand deposits into time or savings deposits is a reduction in the quantity of money itself. If the latter categories of deposits are counted as money, however, the conversion merely increases the size of idle balances. The converse propositions also hold.

tration. The amount of this difference is determined precisely as it was in Section III, for the opposite case of the government bounty. We therefore have in the transition period (cf. eq. 7 and 10):

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t + \frac{S_t}{L_t}. \qquad (12)$$

After the transition-period adjustments are completed, however, NI and $\Sigma(P \times Q)$ will again be stable and equal to each other. But they will be smaller than before, other changes apart, since a certain amount of money has now been withdrawn from active use by the very act of saving itself. The amount of this reduction is determined by just the same factors that determined the increase resulting from the government bounty discussed in Section III, except that here these factors work in the opposite direction. When the period ensuing after the transitional adjustments are accomplished is compared with the period before the new saving occurred, the final reductions are as follows, other changes apart (cf. eq. 6; d is assumed constant; and S, which has no sign of its own, is here necessarily given a negative sign):

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = -S \times d. \qquad (13)$$

2. *Individual dissaving* is any expenditure on consumers' goods or services of money previously saved by individuals, directly or through agents, and of money newly created and employed in its first use to make such expenditures.[27] The latter category consists chiefly of the proceeds of those new bank loans and investments which are used to finance the purchase of consumers' goods and services—primarily, retail instalment loans carried by banks and bank purchases of residence mortgages—and of certain classes of government expenditures. The conversion of time and savings deposits into demand deposits or currency also increases the quantity of money as that term was defined previously. If the proceeds of the conversion are spent on consumers' goods, this

[27] This latter source of funds makes it impossible to treat Dissaving as precisely symmetrical with Saving and hence makes it impossible to use a single net term for the difference between the two.

too is individual dissaving. Most of the operations coming under the head of individual dissaving, however, presumably reflect the spending of money previously saved and held in idle balances, as when individuals accumulate their own cash to buy consumers' goods of large unit price, or when retail finance or mortgage companies loan the proceeds of security issues which the investor has bought from his own past savings.

The effects of the operations embraced under individual dissaving are like those of a government bounty to individuals, described in Section III, in all respects save one. In the case of individual dissaving the proceeds of the dissaving are not ordinarily regarded as themselves constituting additions to individual incomes, for the proceeds are initially used to purchase consumers' goods and services. Hence, in the transitional period the $\Sigma(P \times Q)$ term here rises before the NI term rises and, for the transition period as a whole, is larger than the NI term. This is just opposite to the situation in the case of a government bounty to individuals and requires a corresponding modification to be made in the form of the equation for the transition period itself. The previous analysis of lags must also be modified, so as to begin with an initial change in $\Sigma(P \times Q)$. Let DS be the quantity of individual dissaving. Then the three major equations relating to this dissaving are these (cf. eqs. 4, 6, and 7; the same qualifications apply here):

$$\Delta M - \Delta B = DS\,. \tag{14}$$

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t - \frac{DS_t}{L_t}\,. \tag{15}$$

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = DS \times d\,. \tag{16}$$

3. *Cash bounties to individuals* are sums given to individuals by the money-creating authorities (the government or the banks) under such conditions that the money immediately enters the individual incomes of the recipients.[28] As a matter of practice,

[28] Note that, at the time this income is received, there is no corresponding increase in the value of the society's output—though there may be such an increase subsequently.

this also means that the bounty giver receives no *quid pro quo*. Hence, the operations are effectively confined to certain of the activities of governments. The proceeds of bank loans to individuals, for example, are not treated as direct additions to their current incomes, nor are the proceeds of conversions of time or savings deposits into demand deposits or currency. The category of bounties includes such things as our recent soldiers' bonus so far as taken in cash or discounted, direct relief payments made in cash, etc. But relief payments in kind belong under the head of individual dissaving, since the first thing that happens is an increase in the $\Sigma(P \times Q)$ term, not an increase in individual money incomes; and public-works expenditures are best treated as a part of new investment, discussed below. The equations and lag analysis presented in Section III apply to all such cash bounties, designated by Z, and need not be repeated. One qualification should be made, however. The money used to pay the bounties may either be newly created for the purpose, as in the illustration in Section III, or may come from previous savings held in idle balances—as when private investors buy government bonds from their savings, and the government pays the bounty with the proceeds. Hence, equation (4) is incomplete as it now stands. A term $(-\Delta B)$ must be added, as in the parallel equation (14) for dissaving.

4. *Business hoarding* is a type of operation quite different in its origins and purpose from individual saving, though similar in most of its effects. It is frequently overlooked. A business enterprise hoards, *qua* business enterprise, when it converts other productive assets into cash (currency or deposits) without voluntarily changing the total volume of its assets, and then holds the cash longer than what is for that enterprise one normal maximum income-expenditure period. The quantity of business hoarding is the quantity of cash which is thus held. The line between those operations which do and those which do not constitute business hoarding is not always easy to draw and is determined partly by the length of the unit time period held in view. Consider a firm whose business is highly seasonal, for example, reaching a peak in the late spring. As spring approaches the firm puts all the cash

it can into raw materials, etc., to build up inventories. As spring moves along the firm sells off its inventories as far as possible and then holds the proceeds in cash until the next season. From the point of view of year-to-year changes the firm is not hoarding on balance; but, from the point of view of, say, monthly changes, it hoards cash in the summer and fall and dishoards at other seasons. The most important kind of business hoarding, however, is that which is undertaken in response to actual or expected swings in business activity which have more than a seasonal duration. So far as possible, enterprises which anticipate a protracted decline in general activity let inventories run down, postpone repairs and replacements, and in every way try to build up cash. When they anticipate a rise in general activity, they pursue the opposite course. Such action doubtless accounts for much of the actual fluctuations in the average circular velocity of money, moving directly with general business activity, which the statistical data reveal. The action in question would cause the relative size of idle balances to move inversely with business activity, while circular velocity in turn moves inversely with idle balances (eq. 2).

The effects of business hoarding differ from those of individual saving in only one main respect.[29] The appearance of business hoarding means that current business outlays on replacements of inventories, maintenance of equipment, etc., are reduced, and hence that individual incomes received from the production of the kinds of goods involved decline. The national money income therefore falls before the $\Sigma(P \times Q)$ term falls, and in the transitional period as a whole its total size is therefore smaller than the total size of the latter term. This last effect is just the converse

[29] But business hoarding does not decrease the aggregate quantity of money except in so far as (under the present definition of money) demand deposits or currency are converted into time or savings deposits. Nor does it entail new saving. If funds previously hoarded by a business enterprise are used by the enterprise to pay off bank loans, for example, what has really happened is that the owners of the enterprise have surrendered a part of the assets over which they previously had control. It is best to treat this latter aggregate of operations as really involving, first, business hoarding; then, business dishoarding (taking the form, in effect, of a return of assets to the owners of the enterprise, though these assets are still administered by the enterprise as agent); and then a virtually simultaneous act of new individual saving when the loan is repaid.

of the effect of new individual saving but is like the effect of individual dissaving. The analysis of lags is also the same as that for individual dissaving. The three major equations for new business hoarding (H) are hence as follows:

$$\Delta B - \Delta M = H . \tag{17}$$

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t - \frac{H_t}{L_t} . \tag{18}$$

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = - H \times d . \tag{19}$$

5. *Business dishoarding* is the converse of the preceding type of operation. Like business hoarding, it affects the national money income before it affects the $\Sigma(P \times Q)$ term, and in the transitional period as a whole the total NI term is therefore larger than the latter term. The analysis of lags is also like that of business hoarding and of individual dissaving. The three equations for business dishoarding (DH) are as follows:

$$\Delta M - \Delta B = DH . \tag{20}$$

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t + \frac{DH_t}{L_t} . \tag{21}$$

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = DH \times d . \tag{22}$$

Since business hoarding and dishoarding are precisely symmetrical, a single net term can be used for the difference between them, if desired. Keeping the two separate, however, makes verbal description of the fluctuations in economic activity somewhat simpler.

6. *New investment.*—The great majority of students are now in agreement as to the general meaning of "new investment." The term should not include increases in the value of previously existing capital assets, or purchases of such previously existing assets (which is what the man in the street frequently means when he says he has made an "investment"),[30] or outlays on new producers' goods which serve merely to repair or to replace previous-

[30] Such purchases, other things equal, involve merely a transfer of the saving function from one individual to another.

ly existing equipment as it wears out or becomes unusable from obsolescence. New investment is, rather, the purchase of net additions to capital equipment—to the equipment which can be used to produce consumers' goods and services. The value of the new investment in a given period is the value of such net additions to equipment in that period. The term "equipment" must be taken in the broadest sense, to cover all types of producers' goods. It includes plant, machinery, materials, and other inventories, and, indeed, all goods which man produces except those which have been or are now being turned over to individuals for consumption.[31] It also includes working cash balances and improvements to land but does not include land as space.[32]

But, while this broad meaning of new investment is clear enough, the problem of precise measurement in terms of the kinds of information currently available is difficult. At first glance it seems reasonable to measure new investment as any current excess of outlays on producers' goods above the "normal" volume required for repairs, replacements, etc. But this "normal" volume is itself incapable of any usable definition which is not merely arbitrary, whether it be stated in terms of money outlays or of physical quantities. This is true because of the ceaseless actual changes in production techniques, rates of obsolescence, business policies, price levels, and the volume of economic activity itself. These changes alter the relation between the quantity and cost of equipment and the value of output, impose more than purely technological considerations on the calculation of "normal" repairs and replacements, and may cause the "normal" rate to vary from time to time even for a specific unit of equipment. Complications are also introduced by the phenomena of business hoarding and dishoarding, discussed above. For example, it does not seem useful to treat an expenditure of seasonally idle business balances on the replenishment of inventories as new investment.

The particular measurement adopted does not greatly matter

[31] Thus increased purchases by a retailer of what will be finished consumers' goods when he sells them are purchases, from the retailer's own point of view, of additional producers' goods.

[32] On this see n. 6.

for the purposes of the present paper. To provide a tangible basis, however, I suggest that the money volume of new investment be regarded as measured broadly by any increase in the gross financial commitments of individuals or their agents in private and governmental enterprises, including farms, minus certain items—principally any accompanying increases in the value at which previously existing assets are reported on the books, purchases of land and of securities of other enterprises, and increases in idle cash balances. With respect to the latter, new investment does not take place until and unless the proceeds are spent on new producers' goods as previously defined.[33] With respect to purchases of securities of other enterprises, new investment may or may not take place, depending on what the seller does with the money.[34]

These subtractions are fairly important and are not easy to measure at all accurately. But much the largest part of all increases in gross financial commitments in enterprises is usually accompanied or soon followed by genuine new investment—that is, by net additions to capital equipment. After such allowance as the data permit for the subtractions just indicated, and after making some estimate for the investment activities of unincorporated private enterprises—especially farms—the reported increases in gross financial commitments in enterprises should therefore yield a fairly good approximation to the volume of new investment itself.

Most of the operations which are included under this definition and suggested measurement of new investment are of an obvious character. New security issues and bank borrowing by business enterprises minus refunding issues, and minus other purchases of outstanding securities and of previously utilized land, usually entail new investment.[35] So does the plowing-back of business earn-

[33] Such accumulation and subsequent investment of idle balances can usually be estimated roughly for corporations from balance-sheet reports, with allowance for any probable increase in genuine working cash.

[34] For this and other reasons, it is also safer to leave out of the reckoning enterprises whose chief internal activity is holding securities.

[35] When a firm regularly borrows from banks and regularly repays the loans, say, on a seasonal basis, it is convenient to treat only an increase in the average annual indebtedness as an increase in the firm's financial commitments.

ings.[36] The outlays of government bodies, on the other hand, fall under three different heads. Some of them constitute cash bounties to individuals. The great majority usually constitute individual dissaving, for the chief occupation of governments is usually the provision of consumers' goods and services to taxpayers. Since the interval between the receipt of individual income by the taxpayer and its expenditure by the government on such goods and services is rarely as short as one normal maximum income-expenditure period, for the average of the country as a whole, this individual dissaving through government operations is usually preceded by individual saving or sometimes (in the case of deficits) by the creation of new money. Relief payments in kind are also individual dissaving. On the other hand, government-financed public works and the like are new investment.[37]

The funds used to make new investments may come from previous savings held in idle balances; or from current new saving; or from money newly created, whether by the banks, by the government, or (under the present definition of "money") through the conversion of time or savings deposits into demand deposits or currency.[38] Certain special situations may also be mentioned. If an enterprise plows back part of its earnings in the business, as previously remarked, this is new investment (of funds previously saved by the enterprise, acting as agent for its individual owners). If it fails to keep up its plant replacement and repairs and later has to borrow from banks or issue new securities in order to make good the deficiency, this operation also

[36] This plowing-back is usually reported as earnings transferred to surplus. The accompanying increase in the owner's commitments can thus be distinguished, at the time, from increases in surplus traceable to increased valuations of previously existing assets—which are not new investment.

[37] In the United States most of the R.F.C. operations do not come under this classification at all; their treatment depends on what was done with the money in each case. The A.A.A. operations, since they involved chiefly transactions between producers and distributors alone, imposed business hoarding and dishoarding on the aggregate of enterprises. The Resettlement Administration outlays belong chiefly under investment.

[38] When new investment is effected with money newly created, it is neither preceded nor accompanied by an act of saving as defined above. This is one of a number of points at which the present analysis diverges from, for example, that presented by Keynes in his *General Theory*.

entails new investment, since the expenditures on producers' goods here involved require an increase in the gross volume of financial commitments in the enterprise. If it engages in business hoarding, pays out some of the proceeds as cash dividends to its owners in excess of current earnings, and later has to borrow or issue new securities to make good the deficiency of working cash, this too entails new investment. Again, if the prices of producers' goods rise, the enterprise will have to increase the money volume of its outlays on such goods in order to maintain merely the previous physical volume of its repairs, replacements, etc. This increase in outlays can come only from new security issues, bank borrowing, or the plowing-back of earnings. Hence it requires an increase in the gross volume of financial commitments in the enterprise and is likewise new investment.[39] But a mere increase in the capitalized value of assets is not new investment, nor are any purchases of producers' goods which do not entail an increase in financial commitments in the enterprise.

The preceding definition and suggested measurement of new investment are substantially what the business man's would be, after elimination of duplications between enterprises and of other purchases of previously utilized land and previously utilized securities.[40] Are they also consistent with the general theory of capital?

There is an apparent difficulty here because on the foregoing definition the value of new investment is always positive or zero, never negative (also see eq. 30, below). I think that the concept of "negative" investment or "disinvestment" has no place in an analysis of the flow of money incomes and money payments as such, however, because the corresponding operation in itself produces no alteration in the size of that flow. In the situation envisaged by the term "negative" investment, outlays on repairs, replacements, etc., are not kept up in a volume sufficient to main-

[39] If the prices of such producers' goods fall, however, this merely increases (other things equal) the earnings of the enterprise.

[40] Note that "foreign investment" should be included with other investment so far as it leads, directly or indirectly, to the exportation of goods or services.

tain production facilities at their previous capacity. If that happens, other things equal, the physical quantity of output of consumers' goods will therefore decline, either at once or at some later date. But the prices of these and possibly (depending on demand schedules) of other goods, other changes apart, will then rise proportionately; and, except so far as the circular velocity of money may also shift, the NI and $\Sigma(P \times Q)$ terms will not be altered. The distribution of money incomes and payments between various types of goods and factors will change, but not their total volume. In consequence, there can be no counterpart to "negative" investment in any other term of the preceding equations, and this latter item cannot appear in the equations themselves (to offset it by "negative" saving would be a sterile formalism).

It does not follow from this, however, that our definition of new investment is inconsistent with the accepted ideas of general capital theory; on the contrary. The sum of all previous investment as defined above is the sum of the original money costs of all present and past capital in the society, so far as its production entailed money outlays; and this, as far as it goes, is entirely compatible with capital theory. The explanation of the apparent difficuly is that capital theory is concerned with two operations, only one of which has a counterpart in changes in the *total size* of the flow of money incomes and payments. One operation is capital formation; the other is capital destruction. If capital formation exceeds destruction, then in a money-using society the difference can also be called new (monetary) investment. When taken in isolation this new investment, as will be shown in a moment, both changes the distribution of money incomes and payments and increases their total money volume. If capital destruction exceeds formation, on the other hand, the difference is commonly called "negative" investment. But this latter term is not really symmetrical with positive (monetary) investment because it entails no change in the *total* size of the flow of money incomes and payments. Some other term not involving the use of the word "investment" should be devised to describe it, and the term

"negative" investment, as applied to money-using societies, should be abandoned.[41]

No attempt will be made in the present paper to examine the factors which govern the total money volume of new investment and its changes. This volume will simply be taken as one of the data of the present problem. In another essay, however, I hope to outline an explanation of the volume of investment which runs in terms of technological conditions, the rate of expectation, and the size of the national money income itself.[42]

We may now set up the three major equations for new investment. When money is paid for new producers' goods, the money flows through the processes producing and distributing such goods precisely as in the case examined in Section III and is gradually paid out again as incomes to the individuals working in these processes. Unless further new saving or investment of this income occurs, however, the individual incomes thus received will thereafter be spent on consumers' goods, and the secondary waves of effects described in Section III will come into play through outlays on these consumers' goods, not on additional new investment goods.[43] The national money income and the

[41] The foregoing discussion turns essentially, of course, on the selection of the most convenient definitions of terms, not on any major disagreement as to the nature of the "real" or "underlying" forces and operations involved. If we choose to abstract entirely from money payments and assume a barter economy, the society is "investing" when it is making net additions to its stock of those goods, materials, abilities, etc., which can later be used themselves to produce consumers' goods; it is engaged in "negative" investment when this stock diminishes. In a pure barter economy these two operations plus mere maintenance of the *status quo* are the only alternatives open. Here, saving and investment are always equal and can be described by a single symbol which can have both positive and negative values. But in a money-using economy this basis of definition is neither the most useful, nor entirely adequate. Thus an increase in the quantity of money, if it takes place when resources are not fully utilized, may result in new investment without prior saving; and an increase in idle balances can result in new saving without any new investment. On this also see the last section, below.

[42] In the forthcoming volume of essays in honor of Irving Fisher.

[43] The same general analysis of lags applies here. But the numerical values of the lags may differ from the values suggested in Sec. III, since the values of d and L in the processes producing new investment goods—taking these processes in isolation—may differ from the average values for the country as a whole (cf. my article on "Components"). There is no present way of getting direct evidence on these differences.

$\Sigma(P \times Q)$ term will therefore both be permanently increased, other changes apart, by the new investment, the national income being increased first. Let the quantity of new investment be I. Then we have[44]

$$\Delta M - \Delta B = I . \tag{23}$$

$$(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t + \frac{I_t}{L_t} . \tag{24}$$

$$(\Delta M - \Delta B) \times d = \Delta NI = \Delta\Sigma(P \times Q) = I \times d . \tag{25}$$

Such are the broad effects of the six principal types of operations which directly alter the aggregate quantity and the average circular velocity of the money stock when the several operations are treated separately. No two of the operations are entirely alike in their effects, and all must be included to obtain a comprehensive picture of the factors in play in a modern society.

It should be emphasized that, under these definitions and analysis, saving and new investment are not wholly cognate terms. Previously saved funds may be spent on consumers' goods, not merely on new producers' goods; and new investment

[44] These equations also suggest some inferences with respect to the appropriate size of the total volume of new investment. This volume cannot become indefinitely large in given periods without producing undesirable results because most new investment (except in certain monopoly conditions) leads to an increase in the output of consumers' goods and services. The principal factors determining the "maximum economical quantity" of new investment are, hence, these: (1) the technical coefficient giving the increase in physical output of consumers' goods and services which a dollar of new investment will yield in a given case, under given general conditions. (2) The relation between the schedules of demand for consumers' goods and of costs thereof (including the cost of the new investment itself). New investment which increases the output of consumers' goods beyond the point at which this output can be absorbed at cost prices, under given general conditions, is excessive. (3) The amount by which the new investment permanently increases the national money income, other things equal, and hence increases the aggregate outlays on consumers' goods (eq. 25). New investment effectively shifts the aggregate demand curve for consumers' goods to the right, though with a lag, and thus provides additional income with which the increased output of such goods can be purchased (a complex illustration, within limits, of Say's *loi des débouchés*). (4) The relative importance of those consumers' goods whose output is directly increased as a consequence of the new investment. If this importance is small, the appropriate quantity of new investment is also smaller than it would otherwise be, for the increase in expenditures on consumers' goods which the new investment produces is

may be made with money newly created for the purpose, not merely with money previously saved. If saving and investment chance to be numerically equal in a given period, this fact has no special significance, and does not insure stability of the national money income unless the H, DH, and Z terms are also zero.

VI. THE SIX MAJOR OPERATIONS OCCURRING SIMULTANEOUSLY THE INDIRECT MEASUREMENT OF NEW INVESTMENT

Now suppose that all of the six preceding operations are going on simultaneously, as occurs under actual conditions. First, by combining the appropriate equations in Sections III and V (eqs. 4, 11, 14, 17, 20, and 23) and solving for ΔM, we obtain an expression for the net resultant of the changes from all sources in the aggregate quantity of money:

$$\Delta M = I - S + DS - H + DH + Z + \Delta B . \qquad (26)$$

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spread over the totality of such goods. It is not concentrated merely on those whose output is increased.

If the quantity of new investment in a given period exceeds the quantity which is warranted by the foregoing factors, it will be impossible to sell at cost prices all the increased output of consumers' goods. Then either sales prices will fall or inventories will fail to move, or both; business men may become frightened; and a depression may thus get under way—particularly in consequence of failure to maintain orders for replacements of inventories and equipment. It seems likely that unsold inventories will begin to pile up first, and that, for a considerable time thereafter, subsequent price reductions may not be great enough to make inventories move (perhaps no reduction would, at first). The monetary counterpart of this is both business hoarding (so far as firms are actually able to convert inventories into cash) and individual saving (as when bank loans are paid off or when individuals increase idle cash balances to increase their emergency funds). But, if neither new business hoarding nor individual saving appears, the mere fact that sales prices are not covering current costs will not cause the national money income to fall and, hence, will not start a depression. In that event excessive new investment will impose losses on the individual investors but not on the society as a whole; what they lose, others gain.

These propositions, it seems to me, indicate most of such truth as lies in the contentions of Foster and Catchings and others concerning the alleged unavoidable lack of purchasing power sufficient to take an increased output of goods off the market at cost prices. A "lack" due to excessive rates of profits or to excessive new saving is either not "unavoidable" in this sense or is, in fact, due to excessive prior investment.

This expression is not as cumbrous as might at first appear, for in the right-hand member only ΔB can be either positive or negative. We therefore reach the following important conclusions. An increase in the aggregate quantity of money is either new investment, individual dissaving, business dishoarding, cash bounties to individuals, or an increase in idle balances. That is, it is either an increase in current expenditures on goods and services or an increase in idle balances. Conversely, a decrease in the aggregate quantity of money is either individual saving, business hoarding, or a decrease in idle balances. That is, it is either a decrease in current expenditures on goods and services or a decrease in idle balances.[45]

Second, if we wish to go back to the hypothetical beginning of all money-using transactions, we can obtain from the foregoing an expression for the present size of the money stock:[46]

$$M = \Sigma(I) - \Sigma(S) + \Sigma(DS) - \Sigma(H) + \Sigma(DH) + \Sigma(Z) + B\,. \quad (27)$$

This expression gives the "explanation," in terms of the character and size of antecedent operations, of why the present size of the money stock is what it is. Through time, the H and DH operations largely cancel each other out. In earlier days most newly created money probably flowed initially into individual dissaving (DS), not directly into new investment (I).

Third, we can obtain an expression for the net change between one period when none of the six major operations is going on (or they cancel out) and a later period when none is going on (or they cancel out). In the preceding section it was assumed for convenience that d is constant, but actually the operations in question may alter the payment schedules and related factors of the society somewhat (though this seems unlikely in short periods) and may thus alter d. Such changes are therefore allowed for in

[45] But this current volume of expenditures on goods and services can also be altered by a change in d (see eqs. 9 and 10 above). A decrease in d, while it is going on, is in effect new individual saving (S) or new business hoarding (H): individuals or firms have elected to hold money longer, on the average, than before. An increase in d, while it is going on, is the opposite (DS or DH).

[46] Counting from the beginning of time, $\Sigma(\Delta M)$ equals M, and $\Sigma(\Delta B)$ equals B.

the following general expression, which shows the principal net effects when all the various types of change are going on simultaneously. This expression is obtained by combining the appropriate preceding equations—equations (6), (10), (13), (16), (19), (22), and (25). We then have:[47]

$$\left.\begin{aligned}(\Delta M - \Delta B) \times (d_o + \Delta d_o) = \Delta NI = \Delta\Sigma(P \times Q) \\ = (I - S + DS - H + DH + Z) \times (d_o + \Delta d_o)\,.\end{aligned}\right\} \quad (28)$$

In the hypothetical later period of stability itself, however, the various delta terms of this expression drop out, the last member (which is itself a measure of change) also drops out, and the appropriate expression then becomes the basic equation (3) above.

Fourth, we can obtain a substantially accurate expression for the situation in the transition period, when all the six major operations are in process at once, by combining the appropriate equations of Section V. This transitional situation so called is, of course, the one which in actuality prevails all the time. One or more of the six major types of change is always going on. The composite expression is inaccurate only so far as the unit time periods selected accidentally cut through changes for which the main waves of effects have not yet worked themselves out, and which are not offset by analogous residual effects from the preceding period. By combining these six equations (7, 12, 15, 18, 21, and 24), and by taking the several terms as sums or as averages for the given period, we get:[48]

$$\left.\begin{aligned}(M_t - B_t) \times d_t = NI_t = \Sigma(P \times Q)_t \\ + \frac{I_t + S_t - DS_t - H_t + DH_t + Z_t}{L_t}\,.\end{aligned}\right\} \quad (29)$$

Note that the signs in the last member are not all the same as in the preceding equation. Those terms which in themselves cause NI to be larger than $\Sigma(P \times Q)$ in the transitional period, or I, S, DH, and Z, have here a plus sign; the others, a negative sign.[49] Note also that the general monetary situation can be stable

[47] The first member can also be written $\Delta M \times (C_o + \Delta C_o)$; see eq. (2).

[48] The first member can also be written $(M_t \times C_t)$; see eq. (2).

[49] Note in particular that I and S are additive with respect to their effects, in the transition period, on the difference between NI and $\Sigma(P \times Q)$. Thus suppose that

in the sense that the first two members of the equation and also the $\Sigma(P \times Q)$ term are constant, even though the several terms in the fraction each has a value other than zero. This can occur if the latter terms offset one another, thus giving the fraction itself a value of zero, provided that they also leave the quantity of active money $(M - B)$ unchanged.

Fourth, we can obtain an expression which permits a positive though indirect statistical estimate to be made of the money volume of new investment (I) itself, and even of the money volume of new individual saving (S). Re-write equations (26) and (29) as follows, dropping the subscripts:

$$I - S + DS = \Delta M - \Delta B + H - DH - Z$$

$$I + S - DS = L \times [NI - \Sigma(P \times Q)] + H - DH - Z\,.$$

Add these two equations, divide by 2, and we have:[50]

$$I = \frac{\Delta M - \Delta B + [NI - \Sigma(P \times Q)] \times L}{2} + H - DH - Z\,. \quad (30)$$

The value of this expression is always positive or zero under the the preceding definitions, never negative.

For unit time periods that are whole multiples of business-cycle periods H and DH substantially cancel out. Equation (30) then permits an indirect but positive estimate to be made of the

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funds newly saved are immediately invested, with no other changes going on. Then S_t equals I_t. After the transition adjustments are completed, NI will be of the same size as before the new saving and investment were undertaken and will also equal $\Sigma(P \times Q)$ (see eq. 28; ΔNI is zero). But during the transition period this is not true. New saving (S) decreases $\Sigma(P \times Q)$ at once, and after one income-expenditure period, also begins to decrease NI, as shown above. New investment (I) increases NI after one income-expenditure period and, after one more such period, also begins to increase $\Sigma(P \times Q)$. Hence, during the transition period, new saving and new investment both operate to make $\Sigma(P \times Q)$ currently smaller than NI. For the transition period as a whole, the difference between the two is $(I + S)/L$.

These propositions are not altered by the fact that in the present case new saving and new investment produce equal, opposite, and substantially simultaneous effects upon NI itself, so that NI remains substantially constant throughout. The $\Sigma(P \times Q)$ term, on the other hand, first falls in consequence of the new saving and then rises (less rapidly) in consequence of the new investment. The sum of the values of this term, for the transition period as a whole, is hence smaller than the similar sum for NI.

[50] Changes in the aggregate quantity of money itself, and in the size of idle balances, can be wholly resolved into one or more of the six major types of operations

actual numerical size of the volume of new investment in such unit time periods. The terms M, B, NI, $\Sigma(P \times Q)$, L, and Z can all be estimated, though some more accurately than others, and a numerical value can thus be given to the money volume of new investment (I).[51]

Given I, and again taking unit time periods long enough so that H and DH roughly cancel out, equation (29) also permits a numerical estimate to be made of the volume of new individual saving (S) in such unit time periods, since most of DS can also be estimated directly.[52]

In shorter periods, of course, H and DH are not equal, but

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just discussed, as shown by eq. (26). Hence, no separate analysis of the effects of these changes on the volume of new investment is necessary.

With respect to the operational meaning of the equation see n. 49. Similar reasoning can be applied to the other terms not discussed in that note.

I wish to thank Mr. R. F. Bennett for pointing out the foregoing simple way of deriving eq. (30) and also for making helpful suggestions at a number of other points.

[51] M can be obtained with fair accuracy on a monthly basis from the existing statistics. Changes in idle balances (B) can be estimated on an annual basis provided some assumption is made as to the size of d (on this see my *Behavior of Money*, chap. v); and can be roughly interpolated on a monthly basis, if an allowance (admittedly uncertain) is made for "financial" transactions, from the available data on the exchange velocity of bank deposits. (Little can be done now with the exchange velocity of currency.) Annual estimates of L can also be made from available data (*ibid.*). Annual estimates of NI are already available, and estimates of $\Sigma(P \times Q)$ can be made from the same and other sources (see the recent work of the National Bureau of Economic Research; the relevant parts of government expenditures should also be included here, as indicated in Sec. V [6], above). Z, cash bounties to individuals, can be estimated directly from government reports; in this country the item has been important only in recent years.

[52] For this it is necessary to estimate individual dissaving (DS) directly and also the part of Z which comes from newly created money. Except in the case of the well to do, most purchases of durable consumers' goods of substantial unit price, such as houses or cars, presumably entail dissaving: the individual either saves up the purchase price first, or borrows it. Data on instalment loans, new mortgage financing, building and loan association operations, etc., can also be utilized. The part of DS coming from newly created deposits and due to private operations can be estimated by assigning to it a certain percentage of any increase in bank deposits during the period—namely, the percentage of any increase in bank earning assets which is attributable to increased holdings by banks of residence mortgages, instalment loan paper, etc.—though this procedure is rough and requires sampling. The part of DS due to government outlays can be obtained from official reports. The part thereof coming from new money can be estimated by assigning it a fraction, of any increase in government issues of currency, corresponding to the relative importance of the governmental part of DS in the government budget, plus a

changes in the current difference between them can be estimated by sampling from the reported changes in the cash holdings of business enterprises.[53] These various estimates, however, have not been attempted for the present paper.

Finally, the place of the money volume of expenditures on all types of goods and services—on raw materials and half-finished goods as well as on finished consumers' and new investment goods, and at all stages in the aggregate production and exchange process—may also be indicated. Let this total money volume be $\Sigma(p \times q)$, and let the exchange (Fisher) velocity of money be V. Then, if certain classes of "financial" transactions be excluded (see n. 7), $\Sigma(p \times q)$ equals $M \times V$, which is the total money volume of all transactions. Also, V equals $C \times L$, under stable general conditions.[54] We therefore have, from equation (1)

$$\Sigma(p \times q) = M \times C \times L = NI \times L = \Sigma(P \times Q) \times L$$

or briefly[55]

$$\frac{\Sigma(p \times q)}{L} = \Sigma(P \times Q)\,. \tag{31}$$

This last expression can be utilized, if desired, in the preceding equations.

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similar fraction of any increase in bank deposits (including Federal Reserve banks) which is attributable to increased holdings of government paper.

The volume of new saving (S) in the given period, disregarding H and DH, is then the sum of the following: new saving spent on investment, which is measured by $[NI - \Sigma(P \times Q)] \times L/2$, plus any net increase in idle balances (B), plus those parts of DS and Z which do not come from newly created money (cf. eq. 26 and 29).

This estimate of S omits chiefly that dissaving which arises from the return to active use of sums previously hoarded for no purpose except to hold money itself, whether from panic or for other reasons. This type of dissaving may not be reported by the direct measures of DS suggested above, and to that extent it will make the current volume of new saving as estimated above appear to be smaller than it really is. All that can then be done is to attempt direct estimates of the size of this "dishoarding."

[53] In estimating changes in business hoarding, allowance must be made for increases in cash holdings representing merely undistributed profits not yet paid to owners or reinvested or held against maturing obligations. Business dishoarding can be identified by the failure of earned surplus or of distributions to owners to increase with the decline in cash holdings.

[54] See my *Behavior of Money*, p. 150 n., and the preceding text equation therein.

[55] Eq. (31) can be demonstrated in another way. There are n separate payment stages in any one process of production and distribution. Under stable conditions

From it we can also derive an expression showing the effect of new investment, for example, on total physical output q. Suppose that no other changes take place, so that S, DS, H, DH, and Z in equation (28) are all zero, while d and L are constant. The new investment must hence be financed either with funds newly created or with funds saved in some previous period. The new investment, other things equal, will therefore increase the national *money* income (eq. 25). But if the current utilization of resources is already complete, the new investment cannot increase total *physical* output q. It can only shift resources away from the production of consumers' goods to that of investment goods, and will do so by forcing up the prices of the latter. In this case the aggregate average price level p will therefore rise, in proportion to the increase in the national money income. If the utilization of resources is less than the maximum currently attainable, on the other hand, the new investment may again increase prices alone, or physical output alone, or both. But in each case the national money income will increase, and (if L remains constant) will increase in proportion to the increase in the $\Sigma(p \times q)$ term. Expressing these increases as fractions of the values prevailing prior to the act of new investment, and treat-

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the value of the products sold by each stage to the next succeeding stage is the value of the finished product sold to the final consumer, or $\Sigma(P \times Q)$, multiplied by (on the average) $1/n$, $2/n$, ... n/n, for each succeeding stage. The sum of these multiplying factors is $(n + 1)/2$, and the sum of such payments in any period is, hence, $\Sigma(P \times Q)$ times this fraction. But this is not all. Each stage also pays out money for the labor, power, etc., used in the processes it executes. The sum of these latter payments by each stage, including profits, is the "value added by manufacture" by that stage. On the average, for each stage this value is $\Sigma(P \times Q)/n$. At any point in time the average volume of payments which has been made by each stage, to meet the fabricating costs to date (as distinct from costs of the raw materials) of unfinished goods currently in process, is half this latter value; and the sum of these payments for all the stages combined, on the average, is $\Sigma(P \times Q)/2$.

In any period of time when finished goods of a total value $\Sigma(P \times Q)$ are sold to consumers, the grand total of all payments made for goods and services of all kinds in this period, under stable general conditions, is the sum of the two preceding sets of payments, or $\Sigma(P \times Q) \times (n/2 + 1)$. The latter multiplying factor, as shown in n. 11, is an alternative expression for L.

ing p and q as average prices and aggregate quantities, respectively (thus dispensing with the symbol Σ), we have

$$\frac{\Delta NI}{NI} = \frac{(p + \Delta p) \times (q + \Delta q) - p \times q}{p \times q}. \tag{32}$$

In this expression, and for the case of new investment (I) taking place in isolation, $I \times d$ can be substituted for ΔNI (eq. 25). Solving for Δq, we get

$$\Delta q = \frac{\left(\frac{(I \times d}{NI} + 1\right) \times p \times q}{p + \Delta p} - q. \tag{33}$$

In the "average" case, however, some part of the newly invested funds will soon drift into idle balances (new saving), and d itself may also change a little (see Sec. IV above; also n. 47). The more generally applicable expression, therefore, is

$$\Delta q = \frac{\left(\frac{I \times (C + \Delta C)}{NI} + 1\right) \times p \times q}{p + \Delta p} - q. \tag{34}$$

With given general levels of production techniques, the degree of utilization of total resources and also the volume of employment will usually vary, over periods of some length, substantially with $\Delta q/q$. Equation (34) is hence an expression for Keynes's "investment multiplier," when I is measured in money terms. But this multiplier clearly cannot be given any one definite numerical value in advance of the facts. In the "average" case, some part of the new investment funds I is likely to flow into idle balances, so that ΔNI is usually smaller than $I \times d$; and some rise in prices is likely to appear, so that the relative size of Δq is usually smaller than the relative size of ΔNI. Moreover, both C and p vary cyclically. Finally, in certain circumstances the act of new investment may itself revive confidence, thus releasing previously idle funds, but in other circumstances—as with some governmental operations—it may engender distrust

(see Sec. IV above and Sec. VII [3] below). The relative changes in NI and q as finally reported in the statistics may hence, because of the merging of the effects of different factors of change in these statistics, appear to lie anywhere between values even greater than $I \times d/NI$, and zero; or they may even be negative. Even when I is measured in physical terms, analogous conclusions apply. The new investment may be effected partly or wholly at the expense of the current production of consumers' goods, in consequence of price rises, thus increasing NI but increasing q less than in proportion or not at all. Keynes's treatment of the "multiplier" hence materially oversimplifies the problem.

Expressions similar to equation (34) can be set up for each of the other major types of operation, or for the sum of all six operations, by the use of equation (28).

VII. SOME INFERENCES. ECONOMIC FLUCTUATIONS; CENTRAL CONTROL; CURRENT MONETARY THEORY

The preceding analysis provides a description of the principal flows of money payments in a modern society, of the relations between these flows, of the effects which changes in them produce upon the national money income and the money volume of expenditures on goods and services, and of the immediate causes and consequences of changes in the aggregate quantity and the average circular velocity of the money stock. The analysis reduces the chief monetary variables to only three (M, B, or b, and d); and it is set up in such fashion that nearly all of its terms either can be measured numerically or at least estimated from the statistical data now available. It makes no attempt, however, to investigate the conditions and motives which cause the various major types of monetary operations to be set in motion.

The analysis also suggests a number of further inferences, some of which may be outlined briefly.

1. In the period for which there are adequate data (since 1909) the size of the aggregate money stock has usually moved closely with the national money income, which we may take as a rough and perhaps lagging measure of the total money valume of economic activity. But the larger movements of the national income have usually found little counterpart in the relatively restricted

fluctuations of circular velocity.[56] These facts, when taken in conjunction with the preceding analysis, suggest that, in dealing with the monetary aspects of large changes in the total money volume of economic activity, the first and most important problem is usually an analysis of changes in the size of the money stock itself, of their causes, and of their control. Recent writers have been primarily concerned, instead, with such presumed origins of general disturbances as changes in interest rates, the relative volumes of new saving and investment, liquidity preferences and the propensity to consume, the relative distribution of outlays between consumers' goods and producers' goods, etc. But these factors usually play an important part in changes in the total money volume of economic activity only so far as they are associated with changes in the size of the aggregate money stock itself, or in its average circular velocity—especially in its size. Failing this, they usually influence only the relative distribution of economic activity between its different branches. Most recent writers have rather slid over the relations between the original factors of disturbance just listed and changes in the money stock. Indeed, it is not clear that any consistent and necessary relation at all can be established.[57]

2. The analysis made in preceding sections also casts a certain

[56] See my *Behavior of Money*, chap. v.

[57] Thus Keynes's "propensity to consume" and his "liquidity preference" can both vary widely in face of a constant total stock of money. Indeed, I think the latter factor, when taken as a preference in favor of holding money, can be rigorously defined only on the assumption of such constancy (since on Keynes's own showing a change in the quantity of money may alter the rate of interest and also liquidity preference itself [see *General Theory*, pp. 167–68, 298]). But it is changes in the size of the total money stock itself which ordinarily seem to present the most important problems under actual conditions. Keynes has not shown how changes in the foregoing propensities and preferences will necessarily alter the size of the money stock. Although I do not deny that such a chain of causation may frequently be in operation, its practical significance is surely impaired by the steady decline in relative importance, at least in this country, of commercial loans by banks and of other loans in which the psychology of the general public (other than the bankers and the government, who are the money-creating bodies) is a directly relevant factor.

A further difficulty over theories that stress the effects of changes in interest rates arises from the facts that bank-customer borrowing rates are commonly sticky and that, with respect to rates in the central money markets, there is some evidence to suggest that the important "causal" sequence is from the quantity of bank assets, liabilities (chiefly "money"), and reserves to interest rates, not the reverse. It also seems clear that reference to the relations between market and "natural" rates of interest, though it has some logical value, is almost devoid of statistical meaning.

light on various other prevailing explanations of the larger economic fluctuations. Two brief illustrations will suffice.

First, consider the common popular view that business depressions are "caused" by general price declines. If both the aggregate quantity and the average circular velocity of money remain constant, however, the total money volume of expenditures on finished goods and services must also remain substantially constant (eqs. 1, 3, 31). In this situation general prices can decline only if physical output increases; and an increase in output cannot itself be the cause of the depression. Hence, price declines alone cannot be the cause of the depression. Rather the depression must originate proximately in a decline in the aggregate quantity or the average circular velocity of money, or both. These latter declines must be explained first before more remote "causes" are sought.

Second, it is sometimes asserted that, beginning perhaps in 1927 or 1928, new saving began to run ahead of new investment in this country and that the excess of saving was the ultimate cause of the violent depression of the 1930's. The alleged statistical relation between saving and investment may actually have prevailed, though the fact that both the size and the circular velocity of the aggregate money stock remained high through 1929 makes this seem doubtful. If any excess of saving that occurred had merely increased idle balances and thus lowered circular velocity, however, our experience since 1909 suggests that the resulting depression would not have been nearly so protracted or so profound as was actually the case. Consider, for example, the period 1920–22. Rather it was the great contraction in the quantity of money, after 1930, which was proximately responsible for the abnormal depth and duration of the depression[58]—not the fact that people "saved too much" in these years, but the

[58] In the last forty-five years at least, in this country, periods of business depression have always been accompanied by some decline in the aggregate size of the money stock and periods of boom by large increases. Also, as remarked above, idle balances usually move inversely with business activity, in relative and perhaps in absolute size. There is, hence, a double leverage in the monetary mechanism which works to intensify business fluctuations by producing parallel changes, from two sources simultaneously, in the size of the stock of "active" money ($M - B$).

fact that the new saving which certainly took place in the early 1930's was also allowed, whether unavoidably or not, to produce a heavy decline in the total quantity of money. The two propositions are very far from being two different statements of the same thing.

3. The preceding analysis also clarifies the obstacles encountered by attempts at central monetary and banking control and the reasons for the frequent failure of the measures adopted to achieve the full effects desired. Broadly speaking, such measures can be successful only so far as they are accompanied by, or lead to, the appropriate parallel changes in the aggregate size or the average circular velocity of the money stock, or in both—that is, in the quantity of active money ($M - B$) and, possibly, in the d term. One measure requires particular comment. This is the device of increasing government outlays, whether through public works, direct relief, or other channels. If such increased government outlays take place in an amount I, say, on public works, how great will be their effect? The various possible answers were indicated in preceding sections. If all other conditions remain unchanged, the national money income and the money volume of expenditures on consumers' goods will be increased, after the transitional adjustments, by the amount $I \times d$ (eq. 25). Since d can be estimated at least roughly, a numerical answer can be obtained which will be correct in its general order of magnitude.

But other conditions are not, in fact, likely to remain unchanged. As previously indicated, in actuality the size of the lasting change in the national money income may lie anywhere between $I \times d$ or more and zero, or may even be negative (see Sec. IV). The latter extremes appear if the new money is used, either by the original recipients or by those who subsequently receive payments from such people, to pay off bank loans or for other new saving or hoarding. Indeed, distrust of the government finances engendered by the government outlays themselves may induce a general hoarding and saving panic throughout the country. The lasting increase in the national income will then certainly be less than $I \times d$ and may even be turned into a decrease. The limited statistical evidence suggests that the increases in government outlays in this country in the last few years were large-

ly offset in this fashion, at least to 1934, by large volumes of new individual saving and business hoarding as previously defined.[59]

4. The analysis given in preceding sections is also helpful in appraising various parts of the monetary theories now current. It is at once apparent that there are certain fairly important differences, some of which have already been touched on, between the foregoing analysis and the theories in question. The differences do not, perhaps, involve really fundamental disagreements on the general nature of the money-production-exchange complex. But they do involve disagreements on definitions, on details of the working of the complex, and on the significance of the monetary factor itself.[60]

In particular I should like to comment further on the definition of saving and investment, and the relation between them, as pre-

[59] See the more extended comments in similar vein by A. D. Gayer in his *Public Works* (1935), espec. pp. 378–81 and 388 n.

Keynes, developing an idea of R. F. Kahn, has given examples to show the effect of "leakages" of new government outlays into savings, etc., and reaches the conception of a fixed multiplier that gives the effects upon the national income. J. M. Clark has worked on similar lines. The same results, resting on much the same analysis of the controlling factors, can be obtained more easily and comprehensively by using the analysis presented in earlier sections, provided the net change in the term $(M - B)$ can be supposed to be of some one definite size. It is the impossibility of making such an assumption that the immediately preceding paragraphs have attempted to demonstrate.

Similar objections apply to the "investment multiplier" of Keynes's *General Theory*. Depending on the particular assumption made (and in a complex situation no one assumption may be much more defensible than another), the actual numerical value of the multiplier may lie anywhere between d or higher and zero; or it may even be negative. See the closing paragraphs in Sec. VI above. I also agree with Robertson's remarks in the *Quarterly Journal of Economics*, November, 1936, pp. 172–75; and with Haberler's penetrating, methodological criticisms in the *Zeitschrift für Nationalökonomie* (1936).

In general, Keynes now puts his chief stress on the contention that the output of consumption goods is a function of the output of investment goods. But why let the tail wag the dog? There is, of course, interaction. But with given techniques and populations, it is chiefly the output of investment goods which is a function of the output of consumption goods—or probably, more accurately, of accelerations in this output plus that of investment goods in the recent past. I hope to examine the latter relation in another paper.

[60] Among recent studies the analytic portions of Durbin's *Problem of Credit Policy* seem to be most nearly harmonious with the approach outlined in the present paper, though at each point Durbin stops just short of using the clarifying concept of the circular movement and the average circular velocity of money. Thus see in his book pp. 29, 34 ff., 41 ff., 72 ff., 79, and chap. iii *passim*.

sented by Keynes in his *General Theory*. In the present paper I have attempted to deal primarily with the flows of money payments and incomes and their changes through time. Keynes, here following more nearly in the classical tradition than he perhaps realizes, inclines to treat the quantity of money as not very important (except in connection with the rate of interest) and to say rather little about the flows of money payments. He is concerned more with the underlying "real" factors and phenomena. On my view, his postulated continuous equality between saving and investment is almost correct as a description of reality but not quite; it is likely to be more nearly correct, the longer the period envisaged. Two illustrations will make the point clear.

First, suppose that distrust of business prospects sweeps the country; everyone's liquidity preferences in favor of money rise. A larger part of current income than before is now hoarded in idle balances—is saved—instead of being spent. Incomes will quickly begin to fall as expenditures decline, but with a lag. When liquidity preferences cease rising, income and expenditure will presently come into equality again but at a lower level than before. Meantime, holdings of idle cash have been built up (or bank loans may have been repaid, etc., thus decreasing the amount of money). Keynes would not argue, I think, that any new investment corresponds to this new saving. He does not appear to deal with the case where the saving results in an absolute decrease in the total quantity of money. But, in the case where an increase in idle cash balances ensues, he says that "someone else must be dissaving an equal sum. For his [the latter individual's] loss of wealth must be due to his consumption exceeding his income."[61] As applied to a money-using society, this statement seems to me definitely wrong; there is no present dissaving which offsets the present hoarding of cash.

The error seems to me to arise from Keynes's tacit assumption here that there are no lags between changes in the several items considered. Suppose that individual A regularly buys from B, who buys from C, who buys from A, the purchases all being made in discrete series at the ends of successive and synchronized income-expenditure periods which are "normal" for the several

[61] *General Theory*, p. 82; and cf. the equations on p. 63.

individuals respectively. Let new investment be zero throughout. Now suppose that A alone "hoards" money, or saves, by not spending all his receipts from C in some one income-expenditure period. Under the definition of saving given in Section V (which is substantially Robertson's) it cannot be known that A is saving at all until he has held income, without spending it on consumers' goods, for more than what is for him one normal maximum income-expenditure period. Not until the beginning of the second such period will B's receipts from A and his payments to C fall below their previous rate; and not until the third such period will A's own receipts from C fall. In the second and following periods, it is true for all the individuals in this group that income equals consumption; and this is also true, even in the first period, for B and C. But it is not true for A in the first period: for him, income in that period equals consumption (at a rate lower than before) plus hoarded cash, or saving. A's saving in the first period has no counterpart in anyone else's dissaving or new investment; and here saving and new investment are not, for the group as a whole, equal. The counterpart of the act of new saving by A is here merely the increase in A's idle balances; and reference to the events of 1930–32 shows that such changes may well be of major practical importance at times. This conclusion does not rest on any "optical illusion."[62] It is true that, in the second period, B, and thereafter C, and thereafter A himself, will find themselves unable to sell all their product at prices sufficient to cover previous costs of production. The incurring of these losses, however, is neither "investment" nor "dis-saving." It is, perhaps, "negative investment"; but, as shown elsewhere, this last is not something which is here equal and opposite to saving.[63] Note also that the losses are not even potential losses (or, from the other side, potential decreases in income) until the second and subsequent income-expenditure periods following the beginning of the hoarding.

[62] *Ibid.*, p. 81.

[63] See n. 41 above. Also cf. Keynes's own recent article (*Quar. Jour. Econ.*, February, 1937, p. 223), in which he condemns, in discussing his Multiplier, "the tacit assumption that every individual spends the whole of his income either on consumption or on buying, directly or indirectly, newly produced capital goods"! This seems to argue, with the *Treatise* and the present paper, that I and S need not be equal.

Second, suppose that a bank grants a new loan to finance new investment, which entails a creation of net additional deposits, and that the new investment goods are wholly produced from previously idle resources. What new saving of today corresponds to this new investment of today on any realistic definition of saving? Is it "saving" to use, in the production of investment goods rather than of consumption goods, resources which would otherwise have been entirely idle? I think an affirmative answer can be given only on a definition of "saving" so broad (namely, as any purchase of net additions to capital equipment) as to be useless in a study of money payments and incomes. Keynes's discussion of this case[64] seems to me to involve the same fatal neglect of lags as the preceding case. Even if all the additional income resulting from the additional investment were saved, the increase in income would appear only one or more income-expenditure periods after the act of investment itself (see Sec. V). In the first such period there is new investment with no offsetting new saving: the offset is simply the increase in the quantity of money. And in later periods, incidentally, there is no reason why any new saving that takes place should necessarily equal the volume of further new investment which is financed with new money: the two sets of operations are in largest part independent.

In a word, I think that the equations in the *General Theory* (p. 63) cannot be wholly accurate unless terms are added which take account of changes in the quantity of money and in the size of idle balances, as well as of the other terms in equation (26) above. The issue is at bottom, of course, one of definitions; but, in a study of money-using societies, and of the flows of money payments and incomes in such societies, it seems sensible to use definitions of saving and investment which have counterparts in the behavior of money itself.

The differences on matters of emphasis and general point of view between many of the monetary theories now current and the argument of the present paper are of greater consequence, but they are also more obvious. The present paper has dealt with the effects of changes in the aggregate quantity and the average circular velocity of the money stock and has endeavored to show

[64] *General Theory*, pp. 82 and 83.

that all operations such as new saving, investment, etc., can be proximately resolved into terms of these changes in the money complex. On the first broad level of description and explanation, it is the latter changes in money—and especially in the aggregate quantity of money—that are usually of prime importance in accounting for large changes in the total money volume of economic activity, and that must be explained first. Most current theories, however, jump clean over this initial step in their formal expositions. They proceed at once to analysis and controversy over such factors as changes in interest rates, other inducements to new saving or new investment, etc., without ever examining very explicitly the relation between those factors and the quantity and circular velocity of money. Yet surely such a relation must be established, and its nature made clear, if the factors in question are to be held relevant.

There is hence a large area at the very threshold of the major problems involving money which has not yet been thoroughly explored even speculatively, and still less empirically. Without an adequate foundation of empirical knowledge obtained from systematic observation of the available facts, however, the construction of the more complex speculative structures is of uncertain value. Neither the merits nor the defects of these structures can be conclusively demonstrated.

It will be objected by some students, on the other hand, that the analyses and conclusions of the present paper are themselves "too mechanistic." They will assert that the real problems lie in the whys and the whats, not in the hows. With the latter proposition I wholly agree. But if one attempts to study and interpret the data furnished by direct systematic observation, as surely one must, I believe that the most usable guides to the whys and the whats are likely to be found through careful examination of the hows—of the actual working of the money-production-exchange complex—not through unsubstantiated speculation and argument about conceivably possible characteristics of the system. The "mechanistic" procedure of the present paper is intended only as an essential first step to a broader and more penetrating understanding.

THE PRODUCTIVITY OF LABOR IN GREAT BRITAIN[1]

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IN AN expanding economy with a comparatively high demand for labor, interest in labor productivity[2] is likely to be primarily a result of the desire to economize labor as a method of maintaining or increasing the adequacy of the available labor supply. When the demand for output is comparatively inelastic or undergoing contraction, as during recent decades in Great Britain, interest in labor productivity tends to shift to the problems of reducing labor cost and to the possible effects on job opportunities and the demand for labor. Thus the historical question of the effects of labor-saving machines and methods on volume of employment, which first aroused acute interest in the late eighteenth century, has again emerged as a subject of active discussion. British economy exhibits, over a large part of its history, the evolution of labor-saving techniques under the influence of an expanding market, competitive superiority, and

[1] This article is part of a study for which a grant-in-aid was extended by the Social Science Research Council, New York City.

[2] Changes in the productivity of labor (in average output per unit of labor) are brought about mainly by two factors: (1) technological changes broadly defined and (2) changes in the volume of production. E.g., transportation is obviously more efficient, and the average output of transport workers is larger, when it is carried on by a steam railway system than by ox carts; and transportation by a railway system is economically more efficient, though not necessarily so from a purely technical point of view, when a train crew handles forty cars well filled than when it handles only twenty cars half filled. The preferable unit in computing labor productivity is the man-hour instead of the individual worker, but there is little available information as to changes in working hours in Great Britain, and especially as to the effects of part time and overtime on hours actually worked. Units of output in physical terms, as tons of coal, are preferable for correlation with units of labor, but for aggregates of output it is necessary to use indexes based on weights, such as net product or value added in process of manufacture. Value productivity in terms of profit to the employer in the marginal productivity theory of wages is, of course, to be distinguished from the productivity of labor as here defined.

laissez faire. The present study deals with recent years, which were characterized by a contracting or comparatively inelastic demand following the World War and the decline of Britain's competitive ascendancy—a period when there was an increasingly critical scrutiny of free trade and the traditional conceptions of national economy.[3]

Any estimate of changes in the average output per unit of labor is limited by the degree of adequacy of the statistics of production and of employment, and by the degree of comparability of the two sets of statistics. For production as a whole there is no adequate measure. In any industry or group of industries, other than a very limited number in which there are such basic physical units as tons of coal, estimates of changes in the volume of production must be regarded not as precise measurements but as approximations. With regard to employment, the most important available statistics relate to the total number of insured workers registered for employment and to the number who are not employed. Changes in the number of employed workers, therefore, even among insured workers, must be estimated from the records of unemployment rather than computed from reports dealing directly with employment. The indexes of production as constructed by the Board of Trade do not cover

[3] The choice of the period covered is restricted by available statistics of employment, unemployment, and production. The indexes of production constructed by the Board of Trade are now derived from the census of production of 1930. The former indexes were derived from the census of production of 1924, and these indexes extend only to 1934. The statistics compiled by the Ministry of Labor are not fully comparable before and after 1928. In the interest of the highest possible degree of comparability and accuracy in a field where approximations rather than precise measurements are necessary in any case, the period utilized for comparison of the statistics of the Board of Trade and of the Ministry of Labor is limited to the years 1928–34. This period, although regrettably brief, nevertheless affords a base in the beginning year without serious abnormalities and it covers the extremely significant years immediately preceding, during, and following the depression. Supplementary studies are possible on the basis of the censuses of production of 1924 and 1930; and in the case of a few separate industries additional information is available for the period before 1928. The statistics compiled by the Board of Trade (including the censuses of production) and by the Ministry of Labor apply in most cases to the United Kingdom, including northern Ireland as well as England, Wales, and Scotland. Some of the supplementary figures are restricted either to Great Britain or to England and Wales.

the same industries as those for which the Ministry of Labor collects unemployment statistics. Adjustments must therefore be made in the employment statistics for the purpose of placing them more nearly on a comparable basis with the indexes of production. The limitations and difficulties attending the making of estimates of changes in the productivity of labor are attested by the divergences of the various estimates that have been undertaken.[4]

The estimates in Table 1, giving changes in production, employment, and average output per employee in those industries which are included in the Board of Trade's production index, must be regarded as approximations, although it is believed that they do not exaggerate the extent of increase in average output.

When converted to the base of 1928, the Board of Trade's general index of production rose 6 per cent in 1929, declined 11.6 per cent below the 1928 level in 1932, its lowest point, and in 1934 rose 4.7 per cent above 1928. The number of insured workers employed in these industries was only 1.3 per cent higher in 1929 than in 1928, was 17.3 per cent lower in 1932 than in 1928, and in 1934 was 10.1 per cent below 1928. Throughout the period covered by the table average output per employee showed increases, although the principal advance was from 1933 to 1934. Average output was 8.6 per cent higher in 1933 than in 1928 and 16.5 per cent greater in 1934 than in 1928. This increase from 1933 to 1934 was due in considerable measure to the exceptionally rapid expansion of production. The increase in volume of production made possible a more economical utilization of labor. It is probable also that a decrease in the amount of part

[4] Some recent studies bearing on the subject of changes in labor productivity include N. A. Tolles and P. H. Douglas, "A Measure of British Production," *Journal of Political Economy*, February, 1930, pp. 1–28; C. Clark, "Statistical Studies of the Present Economic Position of Great Britain," *Economic Journal*, September, 1931, pp. 355–64; Committee on Finance and Industry, *Report Presented to Parliament*, June, 1931 (Cmd. 3897), p. 310; Royal Commission on Unemployment Insurance, *Final Report*, 1931 (Cmd. 4185), pp. 93–98; A. W. Flux, "Industrial Productivity in Great Britain and the United States," *Quarterly Journal of Economics*, November, 1933, pp. 1–38; E. Devons, "Output per Head in Great Britain, 1924–1933," *Economic Journal*, September, 1935, pp. 577–80; E. F. Nash, *Machines and Purchasing Power* (1935), pp. 131 and *passim*.

TABLE 1

INDEXES OF PRODUCTION, EMPLOYMENT,* AND AVERAGE OUTPUT PER EMPLOYEE IN THE INDUSTRIES INCLUDED IN THE BOARD OF TRADE'S PRODUCTION INDEX FOR GREAT BRITAIN AND NORTHERN IRELAND, 1928–34

Industry	1928	1929	1930	1931	1932	1933	1934
All industries in Board of Trade's production index:							
Production	100.0	106.0	97.8	88.8	88.4	93.5	104.7
Employment	100.0	101.3	92.9	83.4	82.7	86.1	89.9
Average output per employee	100.0	104.6	105.3	106.5	106.9	108.6	116.5
Mines and quarries:							
Production	100.0	108.5	102.4	91.5	86.9	86.2	92.8
Employment	100.0	104.2	98.4	85.5	79.6	79.0	81.3
Average output per employee	100.0	104.1	104.1	107.0	109.2	109.1	114.1
All manufacturing industries in Board of Trade's production index:							
Production	100.0	105.6	97.0	88.4	88.8	95.0	107.3
Employment	100.0	100.6	91.5	82.9	83.4	87.9	92.1
Average output per employee	100.0	105.0	106.0	106.6	106.5	108.1	116.5
Iron and steel:							
Production	100.0	111.4	86.8	64.4	64.7	80.4	100.3
Employment	100.0	101.2	85.9	66.1	65.1	73.3	86.4
Average output per employee	100.0	110.1	101.0	97.4	99.4	109.7	116.1
Nonferrous metals:							
Production	100.0	101.0	99.8	83.9	80.7	85.4	124.4
Employment	100.0	109.5	98.5	81.4	82.6	92.9	98.6
Average output per employee	100.0	92.2	101.3	103.1	97.7	91.9	126.2
Engineering and shipbuilding:							
Production	100.0	107.0	103.1	83.9	78.3	84.9	99.1
Employment	100.0	103.6	97.7	82.5	78.5	81.2	91.3
Average output per employee	100.0	103.3	105.5	101.7	99.7	104.6	108.4
Textiles:							
Production	100.0	98.6	79.6	77.1	85.2	89.9	92.1
Employment	100.0	96.9	79.5	74.2	79.5	84.6	83.6
Average output per employee	100.0	101.8	100.1	103.9	107.2	106.3	110.2
Chemical and allied trades:							
Production	100.0	105.0	90.0	86.3	88.9	91.6	95.6
Employment	100.0	101.1	95.8	88.1	90.7	94.2	93.9
Average output per employee	100.0	103.9	93.9	98.0	98.0	97.2	101.8
Leather and boots and shoes:							
Production	100.0	96.6	99.4	97.4	94.5	104.1	104.8
Employment	100.0	99.7	95.4	92.3	92.6	99.7	99.1
Average output per employee	100.0	96.9	104.2	105.5	102.1	104.4	105.8

* The indexes of employment are constructed from the number of insured workers (annual averages) employed in those industries which are included in the Board of Trade's production index, although exact comparability is not obtainable (see pp. 353–55).

TABLE 1—*Continued*

Industry	1928	1929	1930	1931	1932	1933	1934
Food, drink, and tobacco:							
Production	100.0	104.0	102.9	101.8	95.8	97.4	102.7
Employment	100.0	100.3	99.3	97.0	98.1	102.1	102.8
Average output per employee	100.0	103.7	103.6	104.9	97.7	95.4	99.9
Gas and electricity:							
Production	100.0	107.8	110.1	113.0	116.7	124.0	134.5
Employment	100.0	99.2	99.9	103.1	101.0	106.6	114.5
Average output per employee	100.0	108.7	110.2	109.6	115.5	116.3	117.5

time accompanying increased production was a material factor in the sudden rise in average output from 1933 to 1934. But undoubtedly the cumulative effect of rationalization and modernization in the older basic industries and of the introduction of most recent technological improvements in the new industries, prominent especially in the south of England, contributed effectively to the increase in labor productivity.

In the combined manufacturing industries of the Board of Trade's production index the changes in average output per employee closely paralleled those in the general index. Production declined more seriously in mines and quarries than in manufacturing, and in 1934 was still 7.2 per cent below 1928, while production in manufacturing industries rose 7.3 per cent by 1934 above the level of 1928. The increase of 14.1 per cent in average output in mines and quarries, in the face of a reduction of 7.2 per cent in production, affords remarkable evidence of the recent transformation of industrial techniques and organization.

In the combined indexes, and also in the indexes of the several main groups of industries, it is to be noted that production and employment alike were lowest in the middle years of the period covered by the table, and that the indexes of average output for these years made comparatively slight advances, falling, indeed, in some cases slightly below that of 1928. The lower level of production increased the amount of overhead labor and made impossible the most economical utilization of labor. There was a considerable increase in the amount of part time during these

years, although available information as to hours actually worked is not sufficient for computing indexes of average output per man-hour. When the period of extreme contraction of volume of production was passed, the indexes of average output advanced much more rapidly, owing to the cumulative effects of rationalization and modernization, to the more economical utilization of labor made possible by the increased volume of business, and to the reduction of part time. It is not possible to isolate these latter factors from technological improvements and rationalization of industry. But in some cases other than mines and quarries, already mentioned, the estimates given in Table 1 seem to afford isolated and conclusive evidence of the effects of improved technology. In the iron and steel industry, for example, the volume of production in 1934 was virtually the same as in 1928 and the schedules of hours had undergone no substantial change; and yet there was an increase of about 16 per cent in average output per employee. In engineering and shipbuilding, production was slightly below the level of 1928 but average output per employee was about 8 per cent higher than in 1928.

In the group of industries classified under the head "Food, Drink, and Tobacco" the index of production rose about 3 per cent from 1928 to 1934, while average output per employee was the same in 1934 as in 1928. This group of industries seems to illustrate a characteristic difficulty in the construction of indexes of aggregate production. In these industries there are certain important products with measurable physical units, such as cigars, cigarettes, barrels of beer, gallons of distilled spirits, etc. But in recent years there was a rapid expansion of other industries, such as canning, novelties, luxury foods, confections, etc., and it is not probable that the production index gives full weight to these types of products. On the other hand, the employment index includes workers in most of these industries because there is no adequate method of eliminating them. It seems probable, therefore, that the estimate of changes in average output per employee is lower than would have been the case if the production and employment statistics could have been placed on an exactly

comparable basis. This is probably true also of the chemical and allied trades.[5]

The index of employment in the gas and electricity industries includes employment in the supply of water as well as electricity because no separation is made in the figures published by the Ministry of Labor. Since the water-supply industry is comparatively stable, it is probable that the inclusion of figures of employment in the index has no serious effect on the rate of change.

In connection with the comparison of the Board of Trade's indexes of production and the Ministry of Labor's figures of employment as given in Table 1, the period covered has been limited to the years 1928–34 for two reasons. In the first place, the Board of Trade initiated a new series of production indexes in 1935 based on the census of production of 1930, and discontinued the series of indexes based on the census of production of 1924. In the second place, the Ministry of Labor's figures before 1928 are not on a basis adequately comparable with the figures after that date. The subsidy to the coal industry and the great strikes of 1926 affected employment not only in that year but in 1927 as well. On January 1, 1928, persons over sixty-five years of age were no longer included among insured workers. "Not until 1928 was it safe to accept the unemployment percentage as indicative of the true trend of employment."[6]

In deriving productivity indexes from the statistics of production and employment, the most serious problem is that of the comparability of the two sets of statistics. In the construction of

[5] See *Final Report on the Fourth Census of Production*, Part V, p. 40, where it is stated that "the increased production of a number of miscellaneous chemicals . . . . cannot be covered adequately by any index based on a sample." Estimates of changes in labor productivity are likely to be given a downward bias by qualitative, as opposed to quantitative, changes in output. Thus the increase in the number of automobiles produced is an extremely inadequate measure of the increase in volume of production because of the great improvement in the quality of automobiles. For a discussion of qualitative versus quantitative changes in application to British industry, particularly in reference to problems of weighting, see N. A. Tolles and P. H. Douglas, "A Measure of British Production," *Journal of Political Economy*, February, 1930, pp. 1–28.

[6] H. Clay, *The Post-war Unemployment Problem* (1929), p. 38.

its production indexes the Board of Trade includes less than sixty separate series, representing only somewhat more than "two-thirds of the total manufacturing and mining activity of Great Britain and Northern Ireland."[7] The increase in volume of production in the industries included in the Board of Trade's index of production from 1924 to 1930 was 3.2 per cent. The estimated increase in production in all the industries included in the censuses of production of 1924 and 1930 was 8.1 per cent.[8] The industries covered by the unemployment statistics of the Ministry of Labor are much more extensive than those which are included either in the censuses of production or in the Board of Trade's production index. There are more than one hundred separate series of indexes of unemployment in manufacturing, mining, and other industries. Among these, the industries which are not included in the Board of Trade's production index tended to expand or at least to resist contraction more effectively than the industries which are included in the index. All the industries covered by the Ministry of Labor's index show an increase of only 2.1 per cent in employment from June, 1928, to June, 1934. Employment in building and public works contracting increased 8.7 per cent; in miscellaneous services (entertainments and sports, hotels, restaurants, laundries, professional services, etc.), 22.9 per cent; and in commerce, banking, insurance, and finance, 13.5 per cent. All these expanding groups are excluded from the production index. Some of the manufacturing industries not included in the index of production expanded rapidly. Thus miscellaneous manufacturing industries not separately specified, employing about one hundred thousand workers in 1928, required 18.5 per cent more workers in June, 1934, than in June, 1928, whereas in manufacturing as a whole the number of workers in June, 1934, was 3.2 per cent smaller than in June, 1928.[9] A comparison of changes in the Board of Trade's

[7] *Board of Trade Journal*, February 21, 1929, pp. 253–54. For details concerning the production indexes see also *Board of Trade Journal*, July 26, 1928, pp. 104–7, and *Final Report on the Fourth Census of Production of the United Kingdom* (1930), Part V, pp. 37–41.

[8] *Final Report on the Fourth Census of Production*, Part V, pp. 41, 43.

[9] *Ministry of Labour Gazette*, December, 1935, pp. 478–79. The figures of employment used for comparison with the production indexes are annual averages. The

production indexes with changes in the Ministry of Labor's figures of employment calls, therefore, for the elimination as far as possible from the figures of the Ministry of Labor of data relating to those industries which are not included in the Board of Trade's production index.[19]

An important aspect of the problem of estimating changes in the volume of employment is the variation in the average number of hours actually worked, but there is no information sufficient for making statistical adjustments in the indexes of employment on the basis of changes in working time. It is known, however, that from 1928 to 1934 there were considerable changes, particularly a reduction of overtime and an increase of part time. Changes in scheduled hours of shifts or plant operation were not extensive. While statistical adjustments are impracticable, available information warrants the conclusion that average hours actually worked were shorter in 1934 than in 1928, although somewhat longer than during the years of extreme depression. An index of average man-hour output would therefore undoubtedly

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Ministry of Labor's monthly figures by industries are not the numbers employed but the numbers unemployed. The monthly unemployment figures consist of insured persons sixteen to sixty-four years of age registered for employment. Once each month there is a count of the number of persons registered for work at the employment exchanges. Once each year, in July, there is a count of the number of persons insured. The index of unemployment is derived from the number of insured persons as shown by the July count and the monthly number of insured persons registered for employment. Persons directly involved in trade disputes are not counted as unemployed. The Ministry of Labor also makes estimates of the number of insured work people in employment in June of each year. These estimates are made by deducting the numbers recorded as unemployed in June of each year from the estimated numbers insured at the beginning of July. In the present article a somewhat different method has been used. For each industry included in the indexes of employment the monthly figures of unemployment have been averaged and the average for the year has been deducted from the number of persons insured as shown by the July count. Since the figures of unemployment do not include those directly engaged in strikes, and since, for the purposes of estimating changes in productivity of labor, persons engaged in strikes are unemployed, slight adjustments have been made in a few instances on the basis of known figures of time lost through strikes.

[19] See E. Devons, "Output per Head in Great Britain, 1924–1933," *Economic Journal*, September, 1935, pp. 577–80.

show a greater increase in the productivity of labor than is apparent from the index of average output per employee.

Table 2 gives figures of production, employment, and average output per operative[11] in the industries included in the censuses of production of 1924 and 1930 for Great Britain and northern Ireland. The data of the censuses of production are much more

TABLE 2*

PERCENTAGE OF CHANGE IN NUMBER OF OPERATIVES, PRODUCTION, AND AVERAGE OUTPUT PER OPERATIVE FROM 1924 TO 1930 IN THE INDUSTRIES INCLUDED IN THE CENSUSES OF PRODUCTION FOR GREAT BRITAIN AND NORTHERN IRELAND

INDUSTRY	PERCENTAGE OF CHANGE, 1924 TO 30 IN—		
	Number of Operatives	Production	Average Output per Operative
All industries included in census of production	− 3.7	+ 8.1	+12.3
Iron and steel	− 2.0	+ 2.6	+ 4.7
Engineering, shipbuilding, and vehicles	+ 7.2	+20.3	+12.2
Nonferrous metals	− 5.9	+ 9.4	+16.3
Textiles	−16.8	−16.5	+ 0.4
Leather	− 5.1	− 6.0	− 0.9
Clothing	+ 3.3	+11.5	+ 7.9
Food, drink, and tobacco	+ 5.3	+12.8	+ 7.1
Chemicals, etc	− 4.4	+ 9.7	+14.7
Paper, printing, and stationery	+10.2	+16.4	+ 5.6
Timber	+21.5	+28.7	+ 5.9
Clay, building materials, and building	+ 7.7	+25.3	+16.3
Miscellaneous	+ 1.5	+19.4	+17.6
Mines and quarries	−20.4	− 6.8	+17.1
Public utility services and government departments	+ 5.2	+20.0	+14.1

* *Fourth Census of Production* (1930), Part V, pp. 43, 85–86.

extensive than those used in connection with the Board of Trade's production indexes. A virtually comprehensive survey was made

[11] The term "operatives" is used synonymously with "wage-earners" as distinguished from the administrative, technical, and clerical staff (*Final Report on the Fourth Census of Production* [1930], Part I, p. xiv). The number of operatives is used rather than the total number of employees because operatives correspond approximately to insured workers in the statistics of the Ministry of Labor. The summary figures used in Table 2 are presented and discussed in Part V of the *Final Report on the Fourth Census of Production*, pp. 42–51, 84–97.

in each of the years, whereas the Board of Trade's index numbers are compiled from comparatively restricted information obtained from various sources for the purpose of maintaining a continuous and up-to-date view of changes in the volume of production. As was stated above, the more comprehensive nature of the data contained in the censuses of production is indicated by the fact that the Board of Trade's index of production increased 3.2 per cent from 1924 to 1930, while the index of production based on the censuses of production rose 8.1 per cent.

The number of operatives in all the industries included in the censuses of production declined 3.7 per cent; the volume of production rose 8.1 per cent; and average output per operative advanced 12.3 per cent. This figure of average output indicates that the productivity of labor from 1924 to 1930 increased somewhat less than from 1928 to 1934 in the Board of Trade group of industries (Table 1). This may be due in part to the fact that the industries covered by the Board of Trade are not identical with those included in the censuses of production. But there was an increasing emphasis on rationalization and modernization, and many new factories, incorporating latest improvements, were being built, especially in the south of England. These facts seem to support the statistical evidence of a somewhat more rapid rise of productivity from 1928 to 1934 than from 1924 to 1930.

The figures of average output per operative in the several main groups of industries included in the censuses of production vary widely in extent of change from a decline of 0.9 per cent in the leather group to an increase of 17.6 per cent in the miscellaneous group. The miscellaneous trades include rubber; scientific instruments, appliances, and apparatus; musical instruments; fancy articles, sports requisites, and games and toys; and several other industries. In the iron and steel group the increase in average output per operative from 1924 to 1930 was only 4.7 per cent in contrast with an increase of 16.1 per cent from 1928 to 1934. The apparent inconsistency may be explained in part by variations in hours of work, but the main factor was the very extensive program of rationalization and modernization inaugurated before 1930 but largely carried into effect thereafter.

The textile industries show only a fractional increase in average output per operative from 1924 to 1930 and an increase of 10.2 per cent from 1928 to 1934. The textile industries were affected by part time in a manner that may have tended to restrict average output per employee to a greater extent from 1924 to 1930 than from 1928 to 1934, but in these industries, as in the case of iron and steel, it is probable that the main explanation is to be found in the extensive rationalization and modernization program carried out for the most part after 1930.

The group described as public utility services and government departments shows an increase of 14.1 per cent in average output per operative, an increase somewhat above the average. This group includes "undertakings" both by local authorities and by companies for supplying gas, electricity, water, and transport. It also includes various activities by the national government, as the telegraph and telephone services, the general post office, and workshops and factories connected with various government departments. The increase in average output in these industries indicates a comparatively high level of efficiency of public undertakings as measured by changes in average output.

The indexes of production given in Tables 1 and 2 are constructed by means of weights based on net output or value added in process. An index thus constructed is necessarily an approximation which must be regarded as an indication of the general extent of change rather than as a precise measurement. It is desirable to utilize actual physical units of output as a measure of changes in volume of production whenever these are available and whenever they are on a basis approximately comparable with employment figures. In Table 3 information is given concerning certain industries in which such physical units of output are available. The figures there given are not perfectly comparable. In the first place, there was a change in the proportion of small firms reporting in 1930 as compared with 1924, but the discrepancies are not serious. In the second place, minor products characteristic of many industries are not included. In the case of the cement industry, for example, the production figures exclude and the employment figures include gypsum and plaster of paris, chalk

TABLE 3*

CHANGES IN AVERAGE OUTPUT PER OPERATIVE IN SPECIFIED INDUSTRIES IN GREAT BRITAIN AND NORTHERN IRELAND, 1924–30

INDUSTRY	OUTPUT				NUMBER OF OPERATIVES			PERCENTAGE OF CHANGE IN OUTPUT PER OPERATIVE, 1924–30
	Units (in Thousands)	1924	1930	Percentage of Change, 1924–30	1924	1930	Percentage of Change, 1924–30	
Coal mining	Tons	265,587.0	243,882.0	− 8.2	1,175,190	915,551	−22.1	+17.9
Blast furnaces—pig iron and ferro-alloys	Tons	7,360.6	6,251.6	−15.1	25,325	18,083	−28.6	+19.0
Tinplate—black plates and tinned and terne plates and sheets	Tons	923.6	857.8	− 7.1	27,098	24,414	− 9.9	+ 3.1
Cement	Tons	3,230.0	4,875.8	+51.0	13,278	13,652	+ 2.8	+46.9
Brewing and malting	Bbls.	20,280.0	19,163.0	− 5.5	53,123	49,945	− 6.0	+ 0.5
Spirit distilling	Proof gals.	32,950.0	30,226.0	− 8.3	3,840	3,125	−18.6	+12.7
Boots and shoes	Dozen pairs	9,757.0	9,908.0	+ 1.5	120,934	112,602	− 6.9	+ 9.1
Cotton yarn (single)	Lbs.	1,395,083.0	1,047,103.0	−24.9	245,261	184,270	−24.9	0.0
Cotton weaving (*a*)	Linear yds.	5,588,808.0	3,179,321.0	−43.1	266,887	191,575	−28.2	−20.7
Cotton weaving (*b*)	Square yds.	6,026,060.0	3,398,749.0	−43.6	.....	.....	.....	−21.4
Paper and board	Tons	1,282.8	1,642.0	+28.0	47,384	48,987	+ 3.4	+23.8
Matches	Boxes (gross of 50 matches per box)	10,207.0	10,140.0	− 0.7	4,471	3,594	−19.6	+23.6

* *Fourth Census of Production* (1930).

and whiting, white lime, etc. These minor products, however, are usually either insignificant or variable in quantity in substantially the same ratio as the principal product. The industries included in Table 3 are therefore significant as affording tests of the validity of the general trends indicated by the indexes of production and as affording supplementary evidence regarding the nature of these trends.

The reduction in average output in cotton weaving (20.7 per cent as measured in terms of linear yards and 21.4 per cent in square yards) seems to have been due to several factors. Among these was the extreme decline in volume of production (more than 43 per cent), which reduced the economies of mass production and increased the amount of part time. In order to spread work and avoid loss of rights to unemployment benefits by their employees, employers introduced various methods of retaining as large a number of workers as possible on their pay rolls. One method was a reduction of the number of looms assigned to each worker. Another method was a system of rotation among the workers. Many plants found it necessary to shut down frequently, thus increasing the amount of part time among employees. Indeed, it is not likely that average man-hour output was smaller in 1930 than in 1924. There was probably a greater decline in the output of standardized types of cloth than in novelties and finer grades, and it is possible that as a result the index of production, which takes no account of changes in the nature or quality of output, has a downward bias, with a corresponding exaggeration in the estimated reduction of average output. The extremely depressed condition of the cotton-weaving industry tended to prevent the introduction of improved equipment and the building of factories of the more modern type. As a result there was comparatively little technological advance.

The estimated increased average output in the cement industry is 46.9 per cent. Volume of production increased 51 per cent, and on account of the expansion of total output there was undoubtedly a considerable reduction in the amount of part time, so that man-hour output probably did not increase as much as average output per operative. The very large increase in total production made

possible a more economical utilization of the labor force and promoted the modernization of the productive facilities of the industry. There was a marked decline in the older types of power facilities. The total horse-power of reciprocating steam engines fell from 32,612 in 1924 to 13,153 in 1930. The capacity of electric generators increased from 43,850 kw. in 1924 to 55,805

TABLE 4*

CHANGES IN VOLUME OF PRODUCTION AND IN AVERAGE OUTPUT PER EMPLOYEE AND PER MAN-SHIFT IN COAL MINING IN GREAT BRITAIN AND NORTHERN IRELAND, 1924-34

YEAR	PRODUCTION		INDEX OF AVERAGE OUTPUT†	
	Tons (in Thousands)	Index	Per Employee	Per Man-Shift
1924	267,118	100.0	100.0	100.0
1925	243,176	91.0	100.5	102.4
1926‡				
1927	251,232	94.1	111.4	117.2
1928	237,472	88.9	115.0	121.0
1929	257,907	96.6	122.7	123.3
1930	243,882	91.3	119.1	122.9
1931	219,459	82.2	115.0	122.9
1932	208,733	78.1	115.9	124.9
1933	207,112	77.5	119.1	127.6
1934	220,728	82.6	127.3	130.3

* *Statistical Abstract for the United Kingdom*, No. 79, pp. 290, 295; *Abstract of Labor Statistics*, No. 21, p. 109; *Ministry of Labour Gazette*, October, 1934, p. 354; *ibid.*, October, 1935, pp. 372, 374.

† The index of output per employee is based on total employment, including uninsured as well as insured employees, clerks and salaried workers as well as wage-earners, and those connected with sidings at pits and with private-branch railways and tramways. Average output was affected by increases in hours in 1926, by reductions in hours in 1930 and 1931, and by variations in part time and overtime.

‡ The figures for 1926 are omitted because of strikes in that year.

kw. in 1930. The capacity of electric motors increased from 69,859 to 156,131 h-p.[12]

The increases in labor productivity in the industries included in Table 3 are particularly significant because of the fact that in eight of the eleven industries the volume of production declined. A general conclusion to be drawn from these figures of changes in labor productivity on the basis of physical units of output is that they tend to confirm the evidence derived from the general indexes as given in earlier tables. This conclusion is supported by

[12] *Final Report on the Fourth Census of Production* (1930), Part IV, p. 159.

more extensive figures of production, employment, and average output in coal mining. These figures are given in Table 4.

From 1925 to 1934 coal production was continuously below the level of 1924, while output per employee, including total labor as well as operative labor, was continuously above the level of 1924, the index of 1934 indicating a 27.3 per cent rise after 1924. The increases in average working hours in 1926 caused a considerable rise in average output per employee, while the reduction in hours in 1930 and 1931 retarded the rise. Variations in part time and overtime also had considerable effects, although the extent of these changes cannot be ascertained. Output per man-shift was affected more particularly by changes in the length of the shifts. The fact that in spite of a reduction of 17.4 per cent in total production there was an increase of 30.3 per cent in average output per man-shift from 1924 to 1934 affords impressive evidence of increases in the productivity of labor in terms of physical units of output.

An additional indication of changes in labor productivity is available in connection with agriculture. The index of production in agriculture as constructed by the London and Cambridge Economic Service shows an increase of 6.8 per cent from 1921 to 1931.[13] The number of persons engaged in agricultural occupations in England and Wales declined from 1,254,350 in 1921 to 1,172,256 in 1931, or 6.5 per cent.[14] On the basis of these measures of changes in production and employment in agriculture, the average output per person engaged in agricultural occupations increased 14.2 per cent from 1921 to 1931. The index of production applies to Great Britain, while the figures of persons engaged in agricultural occupations apply only to England and Wales. The number of workers, excluding occupiers, on agricultural holdings of one acre or more, plus the number of holdings (approximating the number of occupiers), in Great Britain in 1921 was 1,492,217; and the number in 1931 was 1,296,864.[15] The decline

[13] London and Cambridge Economic Service, *Monthly Bulletin*, Vol. XIII, Bull. V (May 25, 1935), p. 162.

[14] *Census of England and Wales* (1931), occupation tables on pp. 673–80.

[15] *Statistical Abstract for the United Kingdom*, No. 79, p. 279.

was 13.1 per cent, and in England and Wales, 14 per cent—a much larger reduction than the 6.5 per cent decline in the number of persons classified by the census as having agricultural occupations in England and Wales during the same period. These figures seem to indicate a larger increase than 14 per cent in average output in agriculture from 1921 to 1931. It is true that the index of production in agriculture is necessarily an approximation, and the change in the amount of labor devoted to agriculture is indicated in no precise degree either by the figures of persons with agricultural occupations or by the figures of agricultural holdings and workers thereon. The estimate of an increase of 14 per cent in labor productivity in agriculture from 1921 to 1931 is given merely as a rough but apparently conservative approximation and as an additional evidence of the general upward trend of labor productivity.

There are three principal factors affecting changes in average output per worker: changes in the number of hours worked, changes in volume of production, and changes in production techniques broadly defined.

It is necessary to distinguish between scheduled hours of shifts or of plant operation and hours actually worked. In respect to scheduled hours, the principal changes after 1924 were in the coal industry, where hours were increased in 1926 and reduced in 1930 and 1931. It is estimated that, in 1926, 934,200 workers, mostly miners, had their hours increased, and only 340 are reported to have had their hours reduced. The aggregate increase in weekly hours in 1926 is estimated to have been nearly 4,000,000. In 1930 about 350,000 workers had their hours reduced, the aggregate reductions being estimated at nearly 900,000 weekly hours. In 1931 increased hours affected about 294,000 workers and reduced hours affected about 111,000, with an aggregate increase in weekly hours of about 142,000. Changes in other years after 1924 were insignificant. The aggregate net decrease in weekly hours from 1928 to 1934, on the basis of changes in scheduled hours, is estimated to have been 763,450.[16] In terms of hours per year this figure represents an appreciable decrease.

[16] *Ministry of Labour Gazette*, January, 1936, p. 5.

More important than changes in scheduled hours were changes in overtime and in part time or short time. These variations resulted from fluctuations in volume of production and from the conditions of unemployment insurance, particularly the waiting period of one week before the right to unemployment benefits is established.

> Employers have adapted their engagement of labor to these conditions, and thus spread the available employment over a larger number of workers than the industry could employ full time. . . . . Instituted as a device for tiding over a temporary depression, this system has been prolonged as year succeeded year of unemployment, and has had the effect of substituting intermittent and irregular employment for regular work in industries in which such conditions were formerly rare.[17]

A special inquiry covering the week ending October 24, 1931, indicated that part time was extremely widespread. While there was no exact correlation of part time with declining volume of production, the depressed industries were particularly affected. In bleaching, printing, dyeing, and finishing of textiles more than one-third of the workers were on short time, and those on short time lost an average of 14.9 hours during the week. In the smelting and rolling of iron and steel and related processes, 24.9 per cent of the workers were reported as being on short time, with an average loss during the week of 15.3 hours.[18] There was undoubtedly an increase in part time from 1928 to 1932, and this tended to restrict average output per worker. While there was a reduction in part time during 1933 and 1934, it seems likely that average hours actually worked were at least no greater in 1934 than in 1928, so that man-hour output probably increased at least to the same extent from 1928 to 1934 as did average output per worker. In connection with comparisons between 1924 and 1930, hours actually worked seem to have been considerably shorter in 1930, and the increase in average man-hour output was therefore probably greater than the increase in average output per worker.

Changes in volume of production affect average output per worker by causing changes in the amount of part time and overtime and to some extent in scheduled hours. The volume of production also affects average output even on a man-hour basis.

[17] H. Clay, *The Post-war Unemployment Problem* (1929), pp. 118–19.

[18] *Ministry of Labour Gazette*, XLI (1933), 9–10.

During a period of declining volume of production certain factors tend to reduce average man-hour output. Among these is the difficulty of maintaining efficiency by means of adequate repairs and replacements. Another factor is the increase in the proportion of overhead labor and of slack time on the part alike of men and of machines. In all industries, and especially in the service industries, which must be maintained irrespective of the fluctuations in demand, the volume of labor is not completely elastic in response to reductions in volume of production. Most industries operate under the conditions of the credit system, with a large investment structure and extensive overhead costs, which continue whether the plant is busy or idle; and it is therefore frequently deemed desirable to continue in operation even at a loss in order to prevent a larger loss due to overhead costs without any income when the plant is idle. It may also be deemed advisable to retain a larger labor force than immediate requirements demand, in order to maintain operative efficiency for taking care of anticipated demands.

On the other hand, certain factors tend to increase average man-hour output during a period of declining volume of production. Among these are the tendency toward elimination of less efficient units of labor and equipment, greater intensity of effort on the part of workers in competition for the reduced number of jobs, and a greater attention by management to economies for reducing costs. In general, it seems that during the earlier stages of a prolonged period of declining output the effect of reduced volume of production is likely to be adverse on man-hour output. But during the period under consideration management ultimately decided in many cases that anticipations of upturning production were not warranted and that drastic readjustments were necessary. These readjustments included reductions of the labor force, managerial economies, and technological improvements. Thus declining production became indirectly a stimulus to the introduction of those changes which were primarily the cause of increased labor productivity. In 1934 the Board of Trade's index of production was 4.7 per cent higher than in 1928; and the increase in volume of production, although slight, con-

tributed directly in some degree to the more effective utilization of the labor force and of mass-production methods.

There seems to be an adequate basis for the view that the changes in rate of productivity were for the most part due to technological and administrative changes. These assumed extremely varied forms. Purely mechanical changes—labor-saving machines—were comparatively unimportant. There were numerous administrative changes connected with the development and extension of scientific management and with the reorganization, refinancing, and consolidation of business enterprises. Probably the outstanding feature of those changes which may be broadly defined as technological was the development of power production.

These various changes affected both the industries which were expanding and those which were contracting. In the expanding industries, such as those connected with motor vehicles, electricity, novelties, luxury goods, and services, capital was available due to the actual or anticipated increase in demand. In these industries there was a tendency to introduce the most recent improvements and methods. In the declining industries the capitalization was often already in excess of the possibility of returns on the nominal investment, which had been greatly inflated during and immediately following the World War. In most of the basic industries capital expansion and replacement had been financed largely from profits. These industries were caught in a contracting circle of declining markets, obsolescent facilities, overcapitalization, lack of profits and of investment funds for modernization, and an accentuated decline due to further obsolescence. For overcoming these difficulties the rationalization movement was promoted. Rationalization included as its aims such changes in technique and organization as would minimize waste of materials, promote a more scientific use and management of labor, standardize the materials used and the types of output, and simplify the processes of production. It also extended to subsidiary aspects of the productive process, such as the bringing-about of improvements and economies in marketing and in transportation.

In England the rationalization movement in application to the

basic industries encountered, as already stated, the various obstacles associated with obsolescence, on the one hand, and overcapitalization and lack of resources for modernization, on the other. The movement was therefore associated in England primarily with attempts to bring about changes in the capital structure and in the organization and administration of enterprise in the basic industries. These efforts were stimulated by measures undertaken by the Bank of England in 1929 and 1930. A Securities Management Trust, Ltd., was established in 1929 to study and advise regarding the finances of the basic industries. The Bankers Industrial Development Company, Ltd., was organized to arrange for financial assistance in carrying out such plans for reorganization as were recommended by the Securities Management Trust. Traditionally the deposit banks had been concerned in the main with advancing short-term loans for financing the commercial needs of business enterprise and had taken comparatively small part in the financing of industrial development or the building of plants and the purchasing and installation of equipment. The investment firms and merchant brokers had been more largely concerned with overseas trade and investments. The basic British productive enterprises at home had depended largely on their own accumulations of savings and profits. The conditions existing in the decade following the World War—monetary deflation, heavy taxation, decline of world-markets, and overcapitalization—were responsible for the initiative of the Bank of England in the development of a policy of financing the reorganization of the capital structure for profitable operation and modernization. Even before the organization of the Securities Management Trust and the Bankers Industrial Development Company, the Bank of England had facilitated the financial reorganization of important engineering firms in the heavy industries. The Coal Mines Act of 1930 included provisions for changes in capital structure and in modes of operation by means of centralization and amalgamation of firms under the supervision of the Board of Trade.

The effects of the rationalization movement in the depressed industries were particularly significant in the iron and steel and coal industries, although attempts were made with measurable

success to carry out similar policies in the cotton and other textile industries.

A development of outstanding importance in the field of technological changes was the increased use of electric power. The central government undertook an extensive program of power development for the utilization of the coal resources of the country and for unifying the system and making electric power more readily available for industrial enterprises. The use of prime movers such as reciprocating steam engines in all trades except in electricity supply undertakings somewhat declined from 1924 to 1930. The capacity of electric generators in these industries increased 16.2 per cent and in electricity supply undertakings 85 per cent. The capacity of electric motors installed in all trades except electricity supply undertakings increased 37.2 per cent. The proportion of power applied electrically in factory trades in 1924 was 53.2 per cent; in 1930, 66.2 per cent.[19] From 1923–24 to 1929–30 electricity generated in Great Britain by authorized electricity supply undertakings increased 97 per cent; electricity sold to consumers for power increased 75 per cent; and electricity sold to consumers for lighting and domestic use increased 163 per cent. There was a continuing increase in the development and utilization of electric power after 1930. From 1928 to 1934 there was an estimated increase of more than 70 per cent in the amount of electricity generated by authorized electricity supply undertakings.[20]

In recent years, and especially after the demobilization of the armed forces of the World War, there have been large surpluses of labor. Great Britain has encountered in an acute form the great economic paradox of modern industrial societies: the persistence, on the one hand, of a large unutilized body of labor and productive facilities, with a virtually constant increase in the efficiency and productivity of these facilities, and the presence, on the other hand, of ungratified needs and wants of the majority of the people, needs and wants which form a vast unutilized potential market. While the British have experienced this paradox in an accentuated

[19] *Final Report on the Fourth Census of Production* (1930), Part V, pp. 109–21.

[20] *Statistical Abstract for the United Kingdom*, No. 79, pp. 304–5; U.S. Department of Commerce, *Electrical Foreign Trade Notes*, No. 398 (April 15, 1936), p. 18.

form, it has been characteristic of industrialized countries generally, and even of unindustrialized countries, although in the latter, when they are not subject to the economic influence of industrialized countries, there is likely to be comparatively full employment of labor and capital at a low level of productivity and consumption. In reference to countries with traditional economic controls, Mr. Keynes asserts:

> The richer the community, the wider will tend to be the gap between its actual and potential production; and therefore the more obvious and outrageous the defects of the economic system. For a poor community will be prone to consume by far the greater part of its output, so that a very modest measure of investment will be sufficient to provide full employment; whereas a wealthy community will have to discover much ampler opportunities for investment if the saving propensities of its wealthier members are to be compatible with the employment of its poorer members.[21]

The solution proposed by Mr. Keynes is essentially a controlled and balanced allocation of income to consumption and private investment, together with an increasing proportion of socialized investment. Many economists hold that a natural equilibrium of consumption and capital-goods expenditure is prevented largely by output restriction and by inelastic production costs and consumer prices, and they favor, therefore, emphasis on efforts to free the cost and price structure from restraints which hinder automatic adjustments by means of a free market. This, it is held, would tend to reduce marginal costs to a point which would make profitable the full employment of labor and capital. No effective method has been devised, however, for maintaining the supply-demand equilibrium at the point of full employment, nor is there convincing evidence that this would be possible even on the basis of subsistence wages and of negligible returns to a considerable part of income seeking investment. British policy has tended toward the point of view that the limited possibilities of competitive price adjustments must at least be supplemented by a considerable measure of socialized investment, especially in monopolistic public utilities, and by a diversion of "stagnant pools" of surplus income back into consumption-production channels by such means as the social wage.

[21] J. M. Keynes, *The General Theory of Employment, Interest, and Money* (1936), pp. 31–32.

HECKSCHER ON MERCANTILISM

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IN THE ideal society of some day, books will be sent out to the reviewers before they are published. The critics will deal with them; their opinions will be printed as prefaces or appendixes; and authors will respond to their tormentors by incorporating their suggestions in the text, by adding a reply as a final chapter—or by not publishing the book. I never hoped to live to see this day dawn, but something approaching it has happened in the case of Professor Heckscher. His great two-volume study of mercantilism appeared in Swedish in 1931, in German in 1932, and in English in 1935.[1] It has been reviewed in virtually all the historical and economic journals; the praise has run high, but some of the fundamental theses have been questioned. Then Heckscher was asked to write one of the series of "Revisions in Economic History" for the *Economic History Review*, and took this opportunity to restate his case, to accept those criticisms which seemed irrefutable, and to rebut those he could not accept.[2] The acceptances are important, and a copy of the "revision" should therefore be presented to every purchaser of the original study.

The book is big as well as great, for it has 811 pages of text and 80 pages of index. The translation is well done;[3] yet the book is not easy to read, for its author's desire to be thorough prevents him

[1] Eli F. Heckscher, *Mercantilism*. London: George Allen & Unwin, Ltd., 1935. Pp. 472+419. 42*s*. New York: Macmillan Co. $15.00.

[2] *Economic History Review*, VII, No. 1 (November, 1936), 44–54.

[3] There are, however, a number of printing errors; e.g., I, 96, 119, 189, 211, 248, 274, 310, 316; II, 138, 407 ("repeated" should be "repealed"). The sentence beginning "The explanation" on II, 317, does not make any sense at all. There are some errors of fact. For instance, the assertion (I, 51) that British customs were not farmed is not correct, nor is the statement (I, 119) that depreciation of English coinage ended in the reign of Henry VIII. Also the use of "etc., etc.," is mildly deplorable.

from letting his argument run along unchecked. He makes a generalization, and then discovers at least one contradiction or exception that demands attention; but, having given this intruder due consideration, he decides it is not really important, and struggles back to his first proposition. The result, graphically expressed, resembles a newspaper chart of a football game between two almost evenly matched teams. One might push the football analogy further, even to a suggestion that the score was about 20–14, to doubts concerning the motives and scholastic standing of the players, and to a suspicion that this branch of economic athletics has been overdone. Yet the book is, by common agreement, an important contribution to the history of economic development, of economic policy, of economic (and perhaps social) theory, of political thought, and of public finance; and as such it is worthy of one more examination.

To Heckscher, as to all other writers on the subject, mercantilism is not a compact, consistent *ism*. Rather it is "only an instrumental concept which, if aptly chosen, should enable us to understand a particular historical period more clearly than we otherwise might" (I, 19). Its content is that "phase in the history of economic policy" which lies between the end of the Middle Ages and the dawn of the age of laissez faire. The chronological boundaries vary from country to country, but the sixteenth to eighteenth centuries see the policy in its heyday. During that period mercantilism was the normal approach to "a common European problem" (I, 13). France and England provide the best examples and occupy most of the pages, but similar policies were pursued (and are briefly considered) in Scandinavia, the German states, Italy, and Spain. Then, as later, statesmen were copycats and imitated each other either in flattery or retaliation.

Only one important country stood outside the mutual-admiration circle. The Netherlands were "less affected by mercantilist tendancies than most other countries"; "they did not really follow mercantilist practice"; and their development was "an antithesis of mercantilism" (I, 351, 352, 353). Yet Dutch policy is neglected except at one point—company organization. Why? What made Holland an exception to the "common European

problem"? An examination of the reasons for the Dutch neglect or rejection of mercantilism would have supplied a good "control," a standard for comparison, and an insight into non-mercantilist thinking about economic affairs. One would gladly surrender a hundred pages explaining how or why France or England did things for twenty explaining why the Dutch did not do them.

When Adam Smith reviewed and reviled "the mercantile system," he dealt chiefly with its monetary attitude and its protectionist policy. When Schmoller wrote about *The Mercantile System and Its Historical Significance* in 1884, he declared that its "innermost kernel is nothing but state-making . . . . the total transformation of society and its organization, as well as of the state and its institutions, in the replacing of a local and territorial economic policy by that of the state."[4] To Schmoller's English contemporary, Cunningham, mercantilism was a "system of power," a policy pursued "so that the power of England relatively to other nations might be promoted." These three writers thus examined four different aspects—money, protection, unification, and power—but each concentrated on one or two items which seemed important to him. Heckscher embraces all four and adds a fifth, for through the welter of discussion and the smoke of controversy he is able to perceive the emergence of a "fairly uniform conception of general social phenomena in the field of economics" and a "mercantilist conception of society."

Of the five aspects, "Mercantilism as a Unifying System" occupies the whole of the first volume and more than half of the total text. The theme can be stated fairly simply. The mercantilist state found itself confronted with two legacies of medieval particularism, in the form of more or less independent feudal lords on the one hand, and more or less autonomous towns on the other. The lords levied tolls, sometimes operated a mint, had their own systems of weights and measures, and so forth; the result was confusion worse confounded, and heavy financial burdens on goods that had to be moved any great distance. The towns sought to pursue a selfish economic policy, trying to monopolize the eco-

[4] Translated by W. J. Ashley (1910), pp. 50–51.

nomic life of the surrounding countryside, to exploit foreigners passing through the town, to control industry and trade by the guild system, and to foster their citizens' external trade.

When a territorial state gained control of lord and town, it sought to add economic unity to political. It tried to remove, lighten, or simplify the tolls and customs, to get uniformity of weights and measures, and to dispel the currency chaos by making a royal monopoly of minting. It took charge of the regulation of industry, either by bringing the guilds under its complete control, and then extending their scope, or by passing laws dealing with producers and products. It took charge of foreign trade by granting charters to regulated or joint-stock companies, thus conferring on them a monopoly of the trade with certain regions and giving them sovereign political power in distant continents.

The story of these efforts in England, France, and Germany is told at great length. We are given one of the best accounts yet available in English of the multiplicity, complexity, confusion, and combined weight of the tolls on the great rivers[5] and of the French customs system; of the babel of weights and measures;[6] of Colbert's heroic efforts to pull some barriers down; of the same statesman's plans for compulsory guild membership and for a state-dominated regulation of every nook and cranny of industry; of the *manufactures royales* and other attempts to foster new industries in France; of the British regulation of industry and the factors which undid it; of the development of commercial organization and the policy of the French, British, and Dutch governments toward it. Each of these topics is discussed with a vast wealth of knowledge based on lengthy examination of primary, as well as secondary, sources. For instance, Heckscher has inspected the judgments of English courts on questions of monopoly, guild privileges, "restraint of trade," etc., with a thoroughness never before attempted even by English scholars; his findings fortify

[5] On the Rhine there was one toll-collector to every 10 miles of the river, and on the Loire one to every 5 miles. In 1650 there were 48 tolls on the Elbe, and between them they absorbed 54 out of every 60 planks of timber descending the whole stream. Salt quintupled in cost by traveling 260 miles on the Loire.

[6] Baden in 1810 had 112 different measures of length, 92 of area, 65 dry measures, 163 for grains, 123 liquid measures, and 80 pound weights.

views already expounded by Tawney that the attitude of the common-law courts was a powerful dissolvent of medieval restraints on individual freedom, and suggest many interesting parallels to students of our own supreme court interpretations.

Yet I doubt whether Heckscher is justified in subjecting us to 423 pages on the theme of "Mercantilism as a Unifying System," for the very simple reason that very little unifying—or even uniformifying—was accomplished. One grows weary of reading a long account of this or that effort and then reaching some such phrase as "confusion reigned supreme," "little was accomplished," "the work of unification was insignificant," and so on. Three successes of some importance are chronicled: (1) the Statute of Artificers (1563), which dealt with wages regulation, apprenticeship, etc., in England; (2) Colbert's tariff of 1664, which consolidated export and import duties, abolished many tolls, and substituted uniform rates in the "five great farms" (tax farm areas), which covered about three-eighths of France; and (3) some unification of customs administration in seventeenth-century Sweden. But two of these three achievements were in countries (Sweden and England) that were not seriously disintegrated and stood in little need of unification; so we are left with Colbert's one big success, a handful of questionable minor successes, and a host of failures, of which Colbert's foreign-trade companies may be mentioned as examples. Hence mercantilism's first aspect might well be called "Love's Labour's Lost," "Much Ado about Nothing," or "Original Sin versus Political Futility."

Faced with these facts, and pricked by the remark of a German critic that economic unity was not an important mercantilist aim, Heckscher has retreated somewhat. In his "revision" he admits:

> It is not only that the attempts at unity were, with few exceptions, failures—such was the result of the majority of mercantilist measures; even these attempts themselves were to a great extent half-hearted. It is difficult to find more than two bold attempts in this direction in the leading countries. . . . . This consideration gives rise to a suspicion that mercantilist statesmen did not take their unifying work seriously [*Econ. Hist. Rev.*, p. 46].

But he does insist that "they were, however, unable to shirk altogether the task of adapting the medieval framework of European

society to new economic and social conditions." It is worth while, therefore, lingering for a moment on Volume I, to ask why so little was accomplished.

Some of the failures lie at the door of defective administration. No one worked harder than Colbert to erect a comprehensive well-organized civil service; yet all his work on toll reform was "undermined by that inveterate cancer of all customs administration of early times, the disobedience and dishonesty of the officials" (I, 105), and much of his industrial regulation suffered the same fate. England did not create an *ad hoc* bureaucracy to supervise the enforcement of her industrial legislation, as Colbert did. Instead she piled much of the work on the overburdened shoulders of the local justices of the peace. Fatigue, indifference, carelessness, or definite defiance of a disliked decree made the justices' work patchy in execution; and when paid officers (searchers) were appointed to enforce laws dealing with cloth, it became necessary to appoint inspectors to watch the searchers, and then supervisors to watch the inspectors. The inefficiency or corruptibility of underpaid customs officers and anti-smuggling squads was notorious.[7]

Some state efforts failed because they could not overcome the strength of local interests vested in and supported by the old order. But probably the chief reason for half-hearted effort or scant success lay in another direction, to which Heckscher has attached inadequate or only incidental importance. Mercantilism had *six* aspects, not five; the sixth was public (or royal) finance, and one might with great cogency maintain it was the most important of the lot. George Unwin may have been wrong when, in Tawney's words, he regarded mercantilism as "a negative and restrictive factor, which had its principal source, not in any deliberate plan of promoting economic progress, but in the fiscal exigencies of short-sighted and impecunious governments";[8] but his error was only one of exaggeration, for rarely in framing policy did a govern-

[7] Of thirteen pages devoted by Lipson to the mercantilist prohibition of wool exports, five deal with the futile efforts to prevent "owling," i.e., smuggling (*Economic History of England* [1931], III, 22–34).

[8] R. H. Tawney (ed.), *Studies in Economic History: the Collected Papers of George Unwin*, p. lxiv.

ment have the deplorable condition of its exchequer far out of mind, and every "projector" who presented a scheme to his ruler stressed the benefit that would directly or indirectly flow into the royal coffers.

If mercantilism was state-building, a picture of the character of the state and of the builder would seem to be a necessary frontispiece or preface. Yet we have to work through to pages 78, 124, and even 178 before we get a real glimpse of the financial problems which beset and bedeviled mercantilist statesmen. By patching the financial fragments together and adding to them what we know from other sources, we see a state which, in Hauser's words, had the obligations of a modern centralized state but the revenue system of a feudal one. The obligations were heavier because of the greater luxury of the courts, the higher price-level, and the growing cost of wars fought with the new equipment by larger mercenary armies. From 1500 to 1815 war was almost a normal relationship between European states; there were only seven calendar years of peace in the seventeenth century, and Great Britain was at war with someone during 84 of the 165 years between 1650 and 1815. This chronic belligerency affected policies, both political and economic; it also affected pockets and led rulers to wild scrambles for cash wherever they could see any. The royal repudiations, from those of Philip II of Spain to those of Charles II of England, are merely instances where perpetually strained finances snapped. French officials, says Heckscher, were always "bent on collecting enough to cover their expenditure of the next twenty-four hours"; instead of planning reforms which might have been more productive in the long run, "the old method of snatching at whatever lay to hand was followed" (I, 124). The English experience was little less desperate, as Professor Dietz has shown. Elizabeth's parsimony, forced loans, increased rents for crown lands, and other devices failed to make ends meet; and the treasury was running into debt at the rate of £100,000 a year during the last part of her reign. The first two Stuarts struggled equally hard, tried to tap new sources of revenue, and turned old faucets on full; but their extravagance and the Scottish troubles made deficits unavoidable.

In such circumstances, far-reaching schemes for unification or regulation had little chance of being seriously developed if they threatened to check for a moment the flow of revenue. More important still, many plans which, on the surface, seemed to aim at unification, regulation, or the promotion of some industry or trade had a fiscal motive. Let us look at one or two instances. The German princes may have thought reform of tolls desirable, but they did nothing because they "found the internal tolls an indispensable source of income" (I, 78). They needed the money so badly that all considerations of economic unity or search for less obstructive sources of income had to be dismissed. France was not in a much better position, and we are not surprised that after Colbert's new deal of 1664 scarcely anything was accomplished until the Revolution made a clean sweep. But we are surprised to learn the importance of fiscal considerations in the elaborate system of Colbertian industrial regulation. That system has always seemed to be the high-water mark in state efforts to induce or enforce industrial morality, to stamp out "tricks of the trade," to suppress dishonest or defective workmanship, and to oblige craftsmen to produce good articles, especially for the export market. It sought to achieve this end by what might be called a "national guild system"; all producers must be guildsmen, subject to *règlements* issued by the state, and supervised by guild or state inspectors. But having led us, through 42 pages of description and discussion, to believe that quality through regulated guild monopoly was the mercantilist aim, Heckscher announces that

> the foregoing account omits one of the most important features of economic policy, if not the most important of all—namely what is called in French *fiscalisme*. . . . . The state, by its intervention, wanted to create large sources of revenue for itself, under the more or less false pretence of guiding industry along the right lines. . . . . The state exploited for its own ends the monopolistic advantages which the guilds had secured for their members or the owners of private privileges had secured for themselves [I, 178].

The whole series of industrial regulations "unblushingly served fiscal ends"; their "true purpose was really fiscal." The guild masterships, wardenships, inspectorships, etc., belonged to that vast army of posts, offices, or classes that "were created simply

in order that they might be sold" in order to enable "the most powerful European state to carry on from day to day for a number of centuries" (I, 180). "Industrial control thus stood revealed as naked fiscalism," as "a kind of indirect taxation, taxing the consumers through the monopolistic artisans" (I, 181).

England gives fewer instances of fiscalism, but has some. For a time, in late Elizabethan and early Stuart times, favorites at court were given, or allowed to buy, a monopolistic right to supervise a trade, to conduct it, and to pocket (or to share with the crown) the fines, fees, and profits; but this excursion into low finance was quickly checked by the courts or by Parliament, and soon came to a dishonored end. The state attitude toward companies, whether regulated or joint stock, had at least one eye on direct fiscal benefits. The crown frequently regarded the companies as milch kine; it would blithely establish a rival company and violate an old charter if more money could thereby be obtained; it would claim a share of the capital and profit, and lean on the East India Company, the South Sea Company, and, of course, the Bank of England after 1694, for loans.[9] When in the eighteenth century the state found other ways of financing itself, the sale of monopolies to corporations ceased. In view of such evidence, one may ask again why mercantilism as a system of public finance should not be regarded as being vastly more important than considerations of unification.

While Volume I is entirely devoted to the endeavor of the state to secure or to exercise its internal power against particularist institutions, Volume II begins with a discussion of the need for external power in relation to other states. The question is put: Was this power "conceived as an *end in itself*, or only as a means for gaining something else, such as the well-being of the nation in this world or its everlasting salvation in the next?" (II, 16). Heckscher's answer is that power was an end in itself, to which all other considerations must bow and to which all economic activities must be bent. The quest for plenty must be subordinate to the quest for power, and every economic enterprise must be ap-

[9] "Right down to 1700 English sovereigns tried to filch for the expenses of government the funds subscribed by merchants for foreign trade" (C. R. Fay, *Imperial Economy*, p. 6).

proved or condemned according to its effect in strengthening or weakening the state's muscles. Economic life must be "mobilized for political purposes" (II, 21).

For this description of the mercantilist viewpoint Heckscher has been forcefully taken to task by his critics, and has retreated so far as to admit that "both 'power' and 'opulence'—to make use of the terms employed bv Adam Smith—have been, and must be, of importance to economic policy of every description" (*Econ. Hist. Rev.*, p. 48). But he still insists that mercantilism put power above opulence, in contrast with laissez faire, which made the creation of wealth its lodestar, with small regard to the effect on the power of the state. I think he might have avoided this criticism if he had stopped to consider whether his end was not in turn a means. What did the mercantilist state want to do with its power when it got it? Use it partly for dynastic, religious, or diplomatic ends, but also to advance economic aims. As Fay has pointed out, England fought its rivals for access to the New World and the high seas in the sixteenth century, for the carrying trade in the seventeenth century, and for an overseas empire, conceived as a source of raw materials and a market for manufactured goods in the eighteenth century.[10] Mercantilism was not a gospel of states that were satisfied merely to defend themselves and keep what they had already; it was a weapon for aggression, for acquisition, for securing more political power *and* economic benefits. Further, Heckscher might have considered whether the silence of laissez faire exponents about power was not due to the fact that they happened to live in a powerful country which was in no danger of attack and in a world that somehow managed to escape a first-class continental war between 1815 and 1914.

Whether power was sought as a means or an end, and whether those who wanted it were monogamous or bigamous in intent, the wooing influenced the attitude of the state toward most forms of economic enterprise. Two methods were adopted. In the first place the state tried to insure that it had within reach the appropriate necessities for war—especially munitions, ships, naval stores, sailors, and money; it therefore forbade the export of some

[10] Fay, *op. cit.*, p. 2.

essentials, encouraged the import of others by low duties or premiums, ordered fish to be eaten in order to keep a plentiful supply of hardy seamen, insisted on the use of native ships in parts of foreign or colonial trade, tried to keep what bullion it had and attract more, restricted the cutting of trees, and, if it had colonies, formulated plans for imperial self-sufficiency. In the second place, the state sought to create "a reservoir of economic resources generally," to stimulate the general economic prosperity of the country, and thus build up a large national income as a guaranty for insuring a powerful state.

The usual method of studying these efforts is to examine them in detail, to traverse the decrees dealing with protection, navigation, colonies, precious metals, the grain trade, emigration, exports, etc., and to estimate their effects. Heckscher takes another road; if in Volume I he reveled in facts and fiats, he now revels in theory. There are only 4 pages dealing with the navigation laws, and only about the same number on colonial policy. Instead of telling us what was done, Heckscher tells us that what men did was determined by the general ideas which they held on the working of the economic system. "Economic policy is determined not so much by the facts as by people's conceptions of these facts" (II, 59); mercantilist economic policy was determined by the prevailing economic ideal, and Heckscher therefore sets out to describe the conception of economic life on which that ideal was based.

This conception is described as a matter of attitudes toward commodities and money; the difference between medieval, mercantilist, and laissez faire policies was the result of different attitudes toward these two goods. Toward commodities three viewpoints can be held: (1) To the merchant, "goods are neither welcome nor unwelcome; they form the basis of his transactions, to be both bought and sold; he does not want to exclude them, but neither does he want to keep them" (*Econ. Hist. Rev.*, p. 49). (2) To the consumer, goods are things that one should have in plenty and at a low price; the consumer has a "hunger for goods." (3) To the producer, goods are a menace if they are too plentiful; oversupply is the enemy, and an understocked market is best; the

producer has a "fear of goods." While policies might be expected to effect a compromise between two or even three of these viewpoints, since producers were also consumers and each community contained two or three classes of interests, Heckscher maintains that this was "much less so than might have been expected"; policy was dominated by one or other of the attitudes.

Medieval policy was framed in the interest of merchants and consumers. The former wanted to get plenty of goods to keep them busy, and hence tried to get control of goods from the hinterland and even of those passing through the town, making the town the staple; the consumers wanted to be sure of having plenty of cheap goods, lest they starve. Hence towns pursued a "policy of provision," encouraging imports but hindering, or even prohibiting, exports. They might protect their producers or cooperate with them to some extent by keeping out foreign producers or products, but this "protectionism" animated by fear of goods and by the gospel of high prices "never or hardly ever occurred at all in the medieval system" (II, 59). State rulers imitated the towns. Rymer's *Foedera* contains about two hundred English proclamations prohibiting or licensing exports during the thirteenth and fourteenth centuries, and the decrees restraining exports are nine times as many as those dealing with imports. Gustavus Vasa issued 209 decrees between 1521 and 1560, of which 112 were export prohibitions and 97 were export licenses. Hence it is possible to show, "even statistically," the overwhelming predominance of the policy of provision.

After the end of the Middle Ages the position was "completely changed." A new policy and a new attitude toward goods pushed the medieval view farther and farther into the background; "there was a break between the staple policy and the policy of provision on the one hand and protectionism on the other." The "fear of goods" gripped men's minds, stimulating a policy directed against imports and in favor of exports—or, in other words, a policy of protection. This policy, together with a new monetary policy, "represents the most important contribution of mercantilism to the history of economic policy" (II, 59). It became "more and more all-pervading, carrying at last the citadel of the 'policy of

provision,' the encouragement of a great supply of foodstuffs; introducing, in its stead, import prohibitions or import duties on foodstuffs, as well as bounties on exports of food" (*Econ. Hist. Rev.*, p. 50).

If we ask why medievalists were provisionists, why mercantilists were protectionists, and what caused the change of attitude, Heckscher's answer is strong and simple. The policy of provision was only partly due to fiscal or military needs or to diplomatic strategy. It was not due to any universal scarcity of goods, since it took shape just when the crusades were stimulating trade and transportation. It was only partly due to uncertainty concerning local supplies of necessaries. All these possible explanations "pass over the really vital fact," which was the *prevalence of a natural economy rather than a money economy*. So long as goods were exchanged for goods, the facts of economic life could be seen more clearly than when a "veil of money" was drawn over the interconnected factors in exchange. Even "the meanest intelligence" would be able to see that nothing was gained if the goods offered brought only a small amount of other goods in return, and that "exchange was the more favourable the larger the amount of goods which could be got in exchange for one's own" (II, 103). Hence there was an ingrained reluctance to let goods go except where those obtainable in return seemed a marvelous bargain. But with the spread of money economy, "the result of production, from the producer's standpoint, no longer consists in other goods, but in money, [and] the money yield appears as the only aim of economic activity." Plenty of goods in the home market is now a bane rather than a boon, since prices are pushed down; buying and importing take money out of one's pocket and out of the country, but selling and exporting put it there. Thus the transfer from provisionism to protectionism, from hunger for goods to fear of goods, is explained fundamentally by the change from natural to money economy.

I wish we could believe it was all as simple as that. Of course it is true that money conceals the barter nature of trade and makes short-sighted views possible; but so does the work of the middleman, and so does every piece of specialization or additional com-

plication or roundaboutness in economic life. We might let much light into discussions of trade policy if every farmer or manufacturer whose goods go abroad were forced to take foreign goods of equal value in return, or if every merchant who carries on an export business were also obliged to run an import trade as well. But does Heckscher establish firmly enough the correlation between economies and policies? He admits it is difficult, and that "it is not possible to provide a *proof* that this explanation is the right one." But he maintains it fits in with the temporal development, and insists it is established "if the results arrived at [by an economic analysis of the situation] are not contradicted by the known facts and if these do not admit of any other equally plausible interpretation" (II, 139). Well, let us see.

Even allowing for a good time lag of conceptions after facts, is the temporal relationship close enough? The time chart runs as follows: The policy of provision "may be said to have commenced after ancient times in various countries during the course of the 12th century and reached its culminating point in the 14th century" (II, 90–91). The protectionist policy began in the first part of the thirteenth century in northern Italy, "when money economy was making great progress"; then in the fourteenth century it spread to the Low Countries, "which were in an advanced state of economic development," then to England by the fifteenth century, and so to other countries. There is thus a gap of only a hundred years between the beginning of provision and the beginning of protection. Was the crucial change in that hundred years the emergence of money economy? Was twelfth century Italy, or thirteenth-century Flanders, in the grip of natural economy? Did the economies of these two countries change so markedly in such a short space of time that a fundamental change in attitude toward commodities was inevitable? Was the policy of provision as portrayed in the tenth-century *Book of the Prefect*[11] of Constantinople due to the fact that the metropolis of the Eastern Empire was operating on a natural economy? Was fourteenth-century England, which supplies Heckscher with his statistics of

[11] A. E. R. Boak, "The Book of the Prefect," in *Journal of Economic and Business History*, I (August, 1929), 597–619.

export control, on a natural economy? Do we, in fact, know enough about the early economic history of Italy or western Europe to be able to say that a policy of provision *originated* at any date or period, or that a natural economy prevailed until a certain time? Heckscher has shown that natural economy existed in Sweden as late as the sixteenth century; but we need many intensive studies of other countries before we can make strong assertions about genesis or exodus. Certainly Mr. Salzman's microscopic study of *English Trade in the Middle Ages*[12] presents no simple picture of set policy determined by this or that economy; rather it warns one against painting simple pictures, against postdating developments, and against minimizing the modernity of the medieval.

The evidence presented by Heckscher raises more questions than it answers. For no single country are we given an adequate account of the two policies or of the trend from one to the other. But three questions are worth putting. In the first place, are not the protectionist elements present in medieval urban policy during the period of provision too large to be dismissed as "historical antecedents" (II, 130); and are not the elements of provisionism present in the mercantilist period so important that the shift in emphasis is really slight? If we take such a classic case as the English grain trade, where Heckscher finds a "sudden change in policy," the medieval policy did not exclude export in good years, while the seventeenth-century laws looked after the consumer by suspending export bounties, banning exports, and welcoming imports in bad years. Professor Barnes, in his *History of the English Corn Laws*, has shown that these steps were taken with sufficient frequency to be regarded as an essential part of the policy, and were not occasional and exceptional.

In the second place, should not the nature of the export prohibitions, as well as their number, be explored?[13] If this were

[12] Oxford University Press, 1931.

[13] I have not had time to do this but have gone through several volumes of Patent and Close Rolls for the period 1274–1320, examining about twenty decrees. The chief concern in them is to prevent goods from going to the king's enemies in France or Scotland.

done, I doubt whether the majority of the 102 prohibitions and 76 export licenses found in Rymer's *Foedera* would be found capable of a provisionist explanation. They would—as Heckscher points out and then blunts the point—be found to have a fiscal bearing, to be revenue-raising devices, to prevent trading with the enemy, to exert diplomatic pressure, to give or sell a privilege to one group at the expense of the rest, to benefit a local industry by hitting a foreign one, and so on. They might reinforce an opinion based on other medieval decrees that in the Middle Ages one could not do anything without getting permission, while in the modern world one can do anything provided one is not expressly forbidden. A prohibition was an exercise of political power, a ban that could be lifted by paying for exemption. The medieval ruler obtained much of his income by saying "No, unless you pay me to say 'Yes.' "

In the third place, cannot the growth of protectionism be explained by the growing intensity of competition as medieval commerce extended its range and volume, by the increasing tendency to attach nationality (or urbanity) to inanimate things, by the desire of infant (or even prenatal) industries to ward off competition from maturer producers, by the desire of old industrial centers to check the competition of young virile rivals, and by the desire to hit a political or economic enemy?[14] I do not think it is anachronistic to suggest that economically backward states felt the urge of economic nationalism for much the same reasons as did Australia, Canada, and the United States in the nineteenth century, or that economically mature states felt the same dread of newcomers as the Chamberlains made England do in the twentieth.

If rulers did not feel that way of their own accord, the native merchant or manufacturing class did not need to be very old or big before it began to bring pressure to bear and to use the state as a weapon in fighting the foreign rival. This was especially true

[14] The two earliest protectionist instances quoted by Heckscher are: (*a*) a ban on imports into Parma (1211) of light cottons from Piacenza, under the desire to plant the industry in Parma; (*b*) a ban on the import of salt into Venice (1228) in competition with the centuries-old Venetian industry (II, 139–40).

when the political center was also the trade center, when a wobbly throne needed financial, moral, or muscular support, or when the bourgeoisie ran the state. It was also the case when a depression hit the market or the price level, and sent the victims scurrying to the ruler with demands that something be done to relieve and protect them. I have long felt that a graph showing business fluctuations should be a compulsory frontispiece for every historical study of commercial policy, and even for every general history. The relationship between depression on the one hand, and discontent, drastic demands, concessions to the vociferous, and great changes in policy, on the other hand, is intimate.[15]

The foregoing comments on external pressure on the state lead to the consideration of a question that recurs frequently as one travels through Heckscher. Who suggested or thought of this or that item of policy? Who were the parents of mercantilism? All too often the policy is regarded as having only one parent, the state; it is described as the child of a ruler who is wise and solicitous for the welfare of his subjects or who is greedy for power, prestige, and pennies. But it seems important to remember that, as is usual, there were two parents. If kings wished to make economic means serve political ends, individuals, groups, regions, and classes were equally willing to use political means to secure profitable economic ends. They would appeal to patriotic or social ideals, and point out the harmony between the expected enhancement of their own income and the furtherance of the national good or the swelling of the king's income; they would exploit the growing antipathy toward the foreigner; they would use

[15] The publication of the *House of Commons Debates* for 1621 (edited by Notestein and others, 1935) illustrates this fact. As Professor Tawney points out in his review (*Political Quarterly*, October–December, 1936, p. 602), "If one is to grasp the development of the economic and political assumptions which were to rule for two centuries . . . . it is not to the theorists, but to heavy-footed agriculturists and slim merchants . . . . that one ought first to turn. They went into action in 1621 with a sober and pertinacious ruthlessness which makes the proceedings of most modern left-wing parties seem like a Sunday-school treat." The driving force was a "mood of horrified astonishment" generated by the fact that a long period of easy prosperity had suddenly ended. They were there to demand relief, reform, retribution, and recovery measures, and their debates have to be read in the light of the great smash of 1616–20.

their full weight in parliament or at court to drive a proposal through; or they would bribe courtiers, send gifts to the king, and offer to split the profits fifty-fifty. They had nothing to learn from any modern lobbyist.

The initiative rarely came from a whole class, for a class was too unwieldy, too class-unconscious, and too much torn by conflicting faiths or interests to have one will or voice. Action came from individuals or compact groups who saw an opportunity to profit by protection or promotion; by getting English tobacco cultivation suppressed for the benefit of the Virginia Company; by stopping the Merchant Adventurer's export of undyed cloth for the benefit of Alderman Cockayne and his Eastland Company; by attacking the London merchants' monopoly of cloth exports, as did the Exeter merchants, and then passing on to demand a ban on the export of Irish wool or woolens to any part except England —in the interests of the Devon textile industry and in defiance of the wishes of the London merchants.[16] The more we dig into the details of seventeenth-century history, the less startling becomes Unwin's contention that nine-tenths of the ingenuity of that period was engaged not in exploiting the powers of nature "but in the endeavour to manipulate the power of the state and the wealth of the community for the benefit of individuals"[17] or special interests. For, let economic historians always try to remember, the aim of enterprise is to get an income; the end matters more than the means, and if the state was the fountain of valuable monopolies or privileges, why not go there for your drink?

Of Heckscher's survey of "Mercantilism as a Monetary System" there is little need for description, since an examination of the essential parts of it, made by Professor Viner, appeared in this *Journal* in 1930,[18] and a detailed account of the English aspect was given by Mr. Lipson in Volume III of his *Economic History of England* (1931). We are given a brilliant analysis of the mercan-

[16] W. G. Hoskins, *Industry, Trade, and People in Exeter, 1600–1800* (1935), pp. 14–15.

[17] Tawney, *Studies in Economic History*, p. 26.

[18] J. Viner, "English Theories of Foreign Trade before Adam Smith," in *Journal of Political Economy*, XXXVIII (1930), 249–301, 404–57.

tilist's attitude toward money, a valuable chapter in the history of monetary theory. But of the history of policy, as represented by the "attempts of political bodies to influence economic development" (I, 14), there is virtually nothing, certainly not 92 lines in the 92 pages. It is interesting to know what the few disinterested onlookers and the legion of special pleaders said; it is fascinating to watch a twentieth-century scholar drip perspiration in his efforts to build a "system" out of pamphlet polemics; but it would have been valuable to know what governments did. Heckscher defends himself in advance by stating that, "where appropriate and where possible," the arguments "are compared with what actually happened, but about the effects of economic policy on the provision of money and the monetary system hardly anything can be said" (II, 182). He claims that even if such effects were insignificant or unavailable, the consequences of the mercantilist view of money were important in two directions. First, "through its connection with protectionism and the policy of power, this aspect of mercantilism became what was perhaps the most highly valued and most frequently employed argument for a policy of economic rivalry between nations, the commercial and colonial wars considered as struggles for the precious metals" (II, 182). It affected foreign policy, colonial policy, and voyages of discovery. "When it was seen that Spain alone had discovered the philosopher's stone, so to speak, trade with the Spanish mainland and her colonies become the chief factor in economic policy, while attacks on Spain's silver fleets by piracy and on her stocks of silver by diplomacy, bribery, and smuggling became a primary interest" (II, 175). Second, the discussions on money "led to a more profound understanding of the factors which the eighteenth-century economists found indispensable for their often contrary conclusions" (II, 182). The truth of the second contention is made abundantly clear, but little evidence is presented in support of the first.

The mercantilist attitude toward precious metals was not new. The medieval "hungerer after goods" wanted metallic goods as well as others, and was eager to import and retain them; we have little to tell us how he expected to attract commodities and coin

without exporting commodities or coin in exchange. The novelty in mercantilism was the willingness to part with commodities in abundance, to take as few as possible, and thus to swell the supply of treasure. "What mercantilism meant . . . . was the reconciliation of the commodity aspect and the money aspect of the problem by a new policy with regard to commodities. It is clear that in this consists its most fundamental innovation" (*Econ. Hist. Rev.*, p. 51). The mercantilist was willing to take the cash and let the commodity go; he preferred bullion to butter. Nay more, he knew why he did so; for, while his fear of goods may have been due to vocational interests, his love of money was now based on conclusions reached after pondering the importance of the precious metals (*a*) outside the mechanism of exchange, as a form of capital and source of income, (*b*) inside the mechanism of exchange, where an increase in the circulating medium would stimulate economic activity, and (*c*) in international exchange. What his ancestors had "cherished unreflectingly" he loved rationally. This transfer from finger tips to brain cells was made under "the pressure of the new intellectual enlightenment in various spheres," of the "new intellectual ferment." "Very few of its tenets can be explained by particular external conditions existing at the time" (*Econ. Hist. Rev.*, p. 51); "the circumstances of the time were not decisive" (II, 177).

Isn't this thesis a little unreal? Isn't the hunger and fear antithesis being pushed to fanciful extremes? And isn't Heckscher forgetting the circumstances which provoked the discussions and the interest which the debaters had in the outcome of the controversy? Apart from two or three casual references, there is scarcely a word about the effect of the East India Company's need for bullion on the discussion, or on the policy of the state toward that need. The medieval attitude may have been "unreflecting" because there was too little trade or money to reflect about; but the sixteenth and seventeenth centuries had abundant food for reflection, and those who looked at that food reached their theory of dietetics in much the same manner as does a Minnesota dairy farmer when he thinks about margarine. The same sense of unreality hangs round Heckscher's defense of the mercantilists

against the charge that they identified wealth with money. The center of the wrangle was external trade and the balance of trade; and as Professor Viner remarks, the whole discussion is meaningless unless we assume that at least some of the debaters "believed, momentarily at least, that all goods other than money were worthless, or were of value only as they served as means of securing money."[19] Further, if the growth of money economy influenced men's outlook in the way Heckscher asserts, the tendency to identify money and wealth would be strengthened, even in "the meanest intelligence."

The final section of the book discusses "Mercantilism as a Conception of Society." Its thesis is that mercantilism and laissez faire had the same general conception of society, the same social philosophy, yet were as far apart as the antipodes in their practical application and economic theory; hence the chief task is to explain the similarity of foundation and difference of superstructure. Each talked of liberty and freedom, especially freedom of trade. Each cut loose from medieval religious standards of conduct, secularizing and amoralizing all consideration of ends and means. Business became business, politics was politics, the welfare of the state became the supreme political aim, some of the deadly sins became at worst venial, usury and luxury were discussed in economic terms, heretics and Jews were tolerated or welcomed since they brought crafts and cash, and men were told to eat fish for the good of the fishery industry, not the salvation of their souls. Finally both schools were rationalistic, not mystical or traditionalistic; they tried to answer questions beginning with "Why," sought for reasons, dug for laws of social causation, and reached a conviction that given causes produced certain inevitable natural results. Yet it was possible for one school to advocate the "most extreme state interference with economic life" and for the other to oppose "any activity on the part of the state beyond that of protecting law and order." Why?

Partly, says Heckscher, because the mercantilist either did not

[19] Viner, *op. cit.*, p. 265. Much of the discussion about the balance of trade will tend to be obscure until we know more about the actual mechanism of international payments in the seventeenth century. A study of that subject is badly needed.

really believe in liberty, had no idea what it really meant, lived in a world in which it was impossible, or used "beautiful phrases ready at hand to serve some particular interest," and then did things which belied his words; the liberal was more fortunate, honest, or specific. Partly because men learned only gradually how "to penetrate the dark arcana of economic relationships" and the eighteenth century could go farther and see more clearly than could the seventeenth, thanks to the pioneer work already done. But chiefly because the liberal believed, while the mercantilist disbelieved, in "a predetermined harmony inherent in the nature of economic phenomena" (II, 318), in "an immanent social rationality" (*Econ. Hist. Rev.*, p. 53). The mercantilist said that if every social phenomenon was regarded as the working-out of fundamental forces, this did not necessarily mean that the forces would produce a favorable result for society without interference from outside or above. Unregulated trade would find its own levels, but the nation might be flooded or turned into a desert. Unregulated traders might grow rich, but the state might grow poor and weak. "Private Vices," unchecked, might bring social and political death; but "by the dexterous management of a skilful Politician" as Mandeville put it, they might "be turned into Public Benefits." The liberal began by doubting the wisdom or skill of the politician at one point or another, and ended up by denying the need for him entirely, because of the harmony of private and social interests and the beneficent operation of natural laws.

This description of the mercantilist conception of society, like those of its monetary and much of its protectionist systems, is based largely upon numerous quotations from the pamphlets of the period. A cynic might contend that one can find extracts to support almost any thesis in these source-materials, and it does seem fair to ask whether they are fitting materials for use in such a lofty purpose as building a conception of society. If mercantilists were using "beautiful phrases ready at hand" when they said "Liberty is the soul of trade," why should they not be doing the same at other times? If some of the quotations give a rational plea for state intervention, almost as many are opposed to it, on

the ground that it is impossible to influence the course of economic life by legislation or that it is unnecessary to try to do so; and some of the latter were written quite as early as were the interventionist extracts. Again, "advanced laissez-faire arguments occurred here and there even before the end of the 17th century .... even in authors who in other respects were pure mercantilists" (II, 322); and even by the middle of that century some men were putting liberal thoughts on paper. When interpreting material, there is danger of trying to squeeze out of it more than is in it, and of going on till the pips squeak—or after. At most, I should not care to risk talking about more than a conception of the state. To the mercantilist politician, the state was more or less the leviathan, absolute and all-powerful; he naturally thought that way about himself. To the subject, the state was an institution capable of rendering great service when it helped or protected him in his business affairs, but capable of being a nuisance when it sought to restrain, regulate, or appropriate. In their willingness to get or accept help and their unwillingness to brook interference, the mercantilist and the liberal were united; but the mercantilist thought he gained most by being helped, while the liberal believed he gained most by not being hindered.

In concluding, it seems just to ask: "What, then, was mercantilism? Was there ever such a thing?" I was once informed that in the London School of Economics ordinary pass students are told there was an Industrial Revolution, but honors students are told there was not. Heckscher tilts hard at another stand-by of the economic history teacher; he protests against the merging of mercantilism into "that unwholesome Irish stew called 'modern capitalism,' " and lashes at those who treat "all sorts of disconnected tendencies, paving the way to modern conditions," survey the economic history of Europe since the end of the Middle Ages, and then call it a history of modern capitalism. But has he saved mercantilism from this lynching of labels, this chastising of chapter headings? Has he not done the same thing as the Sombartians: strung on a thread, at least as tenuous, "all sorts of disconnected tendencies" in governmental policy during several centuries and called the result an *ism?* An *ism* usually consists of a

criticism of existing conditions, an outline of an alternative policy, a theory to justify the criticism and the alternative, and an agitation or movement to supplant the old with the new; or, to put it another way, it is a policy and a theory governed by an inner harmony and advocated or applied in a particular time or phase of development. Under fire from his critics, Heckscher seems willing to let two of his five aspects —unification and power—go, though by no means completely. In his three other aspects—protection, money, and conception of society—he stoutly insists the harmony of a system is clear. If the criticisms made in this review are valid, the clearness is somewhat muddied; and the trinity of situation, theory, and policy is not apparent. One reason for this is that he has sought for a general principle—the attitude toward goods, and sought to fit policy into it. Another reason is that he has taken some of his sources too seriously. A third reason is that he has all too rarely let his eyes wander to see what was happening to the state or to economic life. It might even have helped him greatly to let capitalism come in occasionally to play ball with his hungers, fears, and economies. One of our best American students of mercantilism is not afraid to do so, and is able to reach the following illuminating and realistic conclusion: "Capitalism, then as now, found certain types of governmental action useful for promoting its profit-making ends, and the special pleading found in mercantilism gives us an early illustration of the intensity with which capitalism sets about to achieve its pecuniary goals."[20] Consideration of the political and economic forces that surged round the mercantilist might have made the result an Irish stew; but that would be fitting, for certainly the age of mercantilism was not clear soup.

[20] E. A. J. Johnson, *Some Origins of the Modern Economic World* (1936), p. 98.

ORDERLY MARKETING IN AGRICULTURE[1]

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The farmers who have to do with the great staples have, for some time past and repeatedly, endeavoured to establish a collusive control of their market, with a view to narrowing and stabilizing the margin between the prices they get and the prices which the consumers pay; but so far with no substantial results. It has quite uniformly worked out in nothing better than gestures of desperation. Their markets are controlled, but not by the farmers. . . . . All that matter is now taken care of by those massive vested interests that move obscurely in the background of the market and decide for themselves what the traffic will bear for their benefit at the cost of the farmers on the one side and the consumer of farm products on the other.—THORSTEIN VEBLEN [1923].

THE Agricultural Adjustment Act was originally devised to control centrally the production of agricultural commodities in order to increase the purchasing power of farmers. It was an elementary application of the law of supply and demand. On January 6, 1936—two years, seven months, and twenty-five days after the statute became effective—the Supreme Court of the United States held that the control of production of agricultural products was not a valid federal function (*United States* v. *Butler*, 297 U.S. 1) The great majority of farmers had grown to understand the rudiments of production control: the net result of the techniques employed increased their purchasing power visibly and dramatically. From January 6, 1936, to November 4, 1936, they quietly and stolidly accepted the substitute Soil Conservation and Domestic Allotment Act. In Pasadena, California, in December, 1936, the American Farm Bureau Federation demanded an open return to production control. Secretary of Agriculture Wallace and Administrator H. R. Tolley of the Agricultural Adjustment Administration were troubled and wistful. They knew that even if frank, outright production control was

[1] The views expressed in this article are those of the author and not necessarily those of the Department of Agriculture.

the answer, there was still the Court.[2] "You really don't want production control," they said in effect. "It was good but not as good as you deserve. You want better production control. The best is none too good for you."

If national production control, as experienced, was unconstitutional, the middle-class farmers of the American Farm Bureau Federation are in need of a Thomas Aquinas to work out the logic of how they are going to get better national production control without constitutional change. Back of all the commiseration is, of course, the intricate interplay of law, economics, and governmental policy: the Constitution, the Supreme Court of the United States, the rising national income, war and peace.

What are some of the first principles of agricultural adjustment in the United States? First, agricultural adjustment is neither an economic nor a legal concept. It is a curious combination of both, a social-science dish. Second, it is vexed by two highly significant variables, the weather and war. Subsumed under the latter are import-export conditions, self-sufficient nationalistic movements abroad, and the exigencies of potential conflict. Third, it was commenced on a thoroughgoing scale in 1933 in the first Roosevelt term and, since it cannot, and ought not, now be dropped, is a condition and not a theory. The first and third of these principles are treated herein.

The most important condition now facing agricultural adjustment is the Supreme Court of the United States. Since 1933 the Agricultural Adjustment Act has undergone striking changes compelled mostly by the adjudications of the Court. *Schechter*

[2] Said Administrator Tolley, at Pasadena, on December 10, 1936: "For production control that will work in grave emergencies, the farmers need a new and better plan. The new device should incorporate the best in the plans that already have been tried, drawing upon the farmers' experiences with each of them for further improvements.

"The legal difficulties in attempting to formulate such a program are apparent. But nevertheless it is hard to believe that the nation cannot find ways to solve its pressing problems.

"If I understand the temper of the farmers correctly, they are in no mood to let legalistic barriers and fine-spun interpretations keep them from having equality with large corporations in meeting nationwide problems of production and prices. And if they are almost buried once more under mountainous surpluses, I think they will be even less tolerant of man-made barriers in the path of progress."

Poultry Corp. v. *United States* ([1935], 295 U.S. 495), the case that finally sank the N.R.A., affected the marketing agreement and license provisions of the Agricultural Adjustment Act to a marked degree and extensive revisions were made by the Seventy-fourth Congress. *United States* v. *Butler* (*supra*) has left Congress with the problem of cleaning up the wreckage of the processing tax-benefit payment scheme of production control. Given time and opportunity, the experts of the Department of Agriculture can perfect agricultural adjustment. Is there an open way short of constitutional amendment?

If it is again assumed, as in the more eager days of 1933 it once was, that the true essence of agricultural adjustment lies in the markets, not on the farms, it follows that Congress, because of recent circumstantial developments, can now propitiously enact a new agricultural marketing bill based upon a consistent theory of regulation within a sound framework of legal and economic theory.

Governmental policy is today an incredibly important phase of legality, where legality is co-terminous with constitutionality. Despite conventional denials, the expanding scope of governmental regulation of industry and agriculture has driven the courts very close to assuming the role of arbiters of governmental policy. And, if this is so, lawyers, whose function it is to apply the decisions of the courts, must think in the ways of, and emulate the formulations of, the courts. The decisions of the Supreme Court of the United States, which in the past have dwelt with some eloquence, but largely as *pro forma* dicta, upon the distinction between federal and state power and the nature of executive, legislative, and judicial functions, have in late years utilized the dicta as the rationale of decision itself. This appeared, *mirabile dictu*, in *United States* v. *Butler* (*supra*), in which the justices split grievously and bitterly upon the function of the Court itself in presuming to invalidate legislation upon the basis of implicit governmental policy therein indicated, rather than upon strict legal interpretation of the Constitution. The difficult and delicate task now faced by government attorneys and legislators is the reconciliation of economic objectives with the present

understanding of rules of law, the alignment and realignment of principles in the separate fields of law and economics.

The inception of the new administration brought new instruments of regulation. For a time lawyers and economists devoted energies to codes of fair competition. When the codes died an escape was found for agricultural commodities in the licenses and marketing agreements of the Agricultural Adjustment Act. Orders supplanted licenses in 1935. Throughout there was no consistent theory for the regulation of the marketing of agricultural commodities per se. An unstabilized amalgam of economic devices intended to stay the national emergency shifted from one sector to another as new factors in the crisis appeared. The marketing regulation activities and the production adjustment programs of the administration were keyed to production control. By limiting the amount of commodities introduced into commerce and increasing the demand for commodities through the raising of wages and lowering of hours, it was anticipated that the normal operation of the law of supply and demand would result in a higher price to the farmer with consequent economic betterment. The Court upset that apple cart. The time has now come unequivocally to divorce the regulation of the marketing of agricultural commodities from legalistic and psychological residua in the minds of the judiciary that the unconstitutionality of the Agricultural Adjustment Act itself contaminates marketing regulation for the present and the future.

Let it be assumed that the regulation of the marketing of agricultural commodities produced in the United States is desirable in the public interest. Let it be further assumed that the present administration would be happy, indeed, if such regulation were accomplished within the present language of the Constitution. If these assumptions are made, two things follow: first, that the Agricultural Adjustment Act is inadequate as a regulatory vehicle; and, therefore, second, a new act is required, not with the opportunist purpose of patching various legal rents and tears in the Agricultural Adjustment Act, but with the long-term objective of creating a new regulatory mechanism upon a new theory, employing for the formulation of the latter the valuable legal and

economic experience gained in the administration of the Agricultural Adjustment Act, and in the pragmatic testing and retesting of the act by agricultural and industrial interests.

The Agricultural Adjustment Act was enacted as a remedial measure for alleviating the strained and desperate economic condition of the country. Effectuating the administration philosophy that national prosperity and the general welfare depended in part upon the economic well-being of the farmers, the Act directed that the economic return of the farmer be raised to a specified statistical level and kept there. Since the farmer was both a producer and a consumer—his function in the economic order to produce and exchange farm products for industrial products—the level of return for farm production was at the same time the demand for industrial production of over thirty-three millions of the consuming population. Since the emergency faced by the country was defined as the involuntary lowering of the so-called adjusted (and hence prosperous) level of the past, the immediate objective was to return to a period when agricultural production and industrial production were in a well-ordered sequence of supply and demand. Congress, therefore, chose an arbitrary period in a series of years in which the economic order was presumably balanced, and directed that all activities under the Agricultural Adjustment Act be pointed toward the recapture of the level of prosperity of those years. It was the legislature's remembrance of things past.

Among the devices set forth in the Act to achieve the objective of Congress was "parity price," a new and unexplored field of governmental regulation. Parity price was originally conceived to be merely a mathematical standard which could be easily computed upon the basis of available statistics by prudent and impartial economists. In the course of administration it developed that parity price was not simply a mathematical formula but a field of exploration. Conceived as a principle whose greatest merit was its simplicity, it gave rise quickly to numerous complexities. Economists found that even the comprehensive data of the Department of Agriculture were frequently of small utility in ascertaining parity price. To ascertain parity in its ideal form in

numerous instances, only unreeling an economic talking picture of the basic "adjusted" years would suffice. Whether statistical science itself was inadequate, or whether the data available were misleading, the impracticality of achieving the ideal resulted in compromises which, while necessary for proper administration, by no means fulfilled the conception of parity price held by the framers of the Agricultural Adjustment Act and by Congress. Parity price should now be abolished; not only for its inherent imperfections as an administrative standard, but also because it is now outmoded, dated by the march of economic events.

Whether or not the national economic emergency, which provided the background out of which parity price emerged, is now over, parity price no longer fits within the present justification for the regulation of the marketing of agricultural commodities. As to numerous commodities, parity price, as a mathematical figure, has been realized or very closely approached. It is clearly possible to proceed upon the concomitant objective of the Act, that is to say, a continued program of regulation to assure the maintenance of parity price whether realized by the application of the regulatory mechanisms of the Act, by such predictable circumstances as improved economic conditions, or by such adventitious circumstances as drought. But if a permanent program is to be established on the theory of *maintenance* of parity price, rather than on its *achievement*, there seems little need and no merit in retaining parity price in its present form. A program based upon maintenance of parity price, apart from the fact that it confines the present economic progress of the farming population to the limitations of a period in the past, can be utilized rationally only for the purpose of assuring that the evils of the depression years shall not return again. If this is true, and the objective of future regulation is prevention rather than cure, Congress should develop for the future of the farmers' markets a consistent theory of orderly marketing in interstate commerce, without legally straitjacketing the economic welfare of the farmers.

It is suggested that Congress utilize its plenary interstate commerce power for the purpose of fostering and promoting orderly exchange of agricultural commodities in interstate com-

merce, by eliminating demonstrated evils that have arisen in the past in connection with the distribution of the economic return for farm products. Elimination of glutted and undersupplied markets, unfair trade practices, and unfair methods of competition, and the substitution of regularized and stabilized marketing, are within the purview of Congress.

Parity price, while easy to state as a formula, was difficult to apply. An ordered market for agricultural commodities in interstate commerce, while indeed difficult to define in a statute, will, based on the experience of the past few years, be easier to administer and apply. To achieve the ordered market it is requisite that the respective interests of the various groups overtly involved in the marketing of a commodity be weighed in terms of the common good. These groups fall naturally into three classes: the producers, the handlers and distributors, and the consumers. Where the interests of each of these three large groups is fostered and protected so that no one group may prosper at the expense of the other, either through the unregulated operation of the law of supply and demand or through monopolistic and unfair practices, the market for the commodity will by definition be in order. It follows that there should be a restatement of the interests of the producers, the handlers and distributors, and the consumers in the economic process of taking a commodity to and from the market. The regulatory function of government is to supply definitions for the respective interests, since the three and the proper proportioning of purpose among them represent the true public interest of which government is properly the guardian.

In the present economic order the prime interest of the producer, the handler and distributor, and the consumer is price. The producer requires that he receive a fair and reasonable return for his product. The handler requires that in return for efficient distribution of the product he be given a profit. The consumer requires that the price that he pays for the product be in some reasonable relationship to his income so that he may obtain as many agricultural commodities as he desires, of the proper quality and grade, for that share of his income devoted to food and

clothing. Legislation should attempt to set the confines within which these frequently conflicting purposes may operate.

But it is not necessarily true that the legislature may not determine to aid one class directly while aiding the others indirectly. The constitutional limitation upon unfair and arbitrary classification has never been understood to mean that Congress may not determine that the interests of one group are more closely related to the general welfare than the interests of another. Railroad legislation has been enacted for the benefit of the railroads so that in turn the public might be benefited. Farm legislation may be enacted upon the theory that the paramount good to be achieved is the benefit of the farm producer. Consequently, an act which is based upon a theory of ordered markets in interstate commerce will not sacrifice the true interest of the farmer, but, on the contrary, will be devoted to the purpose of assuring for him the primary benefit. For this purpose an important, if not prime, element of an act based upon a theory of ordered marketing will be that the farmer obtain that price for the commodity which will assist in the maintenance of an ordered market. It must be legally mandatory that, if the farmer does not receive the fair exchange value for his commodity, his market for that commodity will be deemed disordered. A statute which is enacted for the purpose of orderly marketing must premise as the fundamental limitation of an orderly market that the farmer receive a fair exchange value for his products.

Fair exchange value has little or no relationship to parity price. Parity price is an arbitrary formula based upon the experiences of the past. Fair exchange value should be a concept of equitable share in economic return in the present. Assuming that the farmer's return for agricultural commodities will automatically seek its own level in the national income without regulation (be that level just or unjust), the purpose of Congress should be to regulate a sector of the economic front to keep always in balance, in the light of the changing complexion of economic events, the return that the farmer should receive.

The public interest, as has been seen, can be conserved only by

maintaining in just equipoise the respective interests, sometimes conflicting but alike in perspective, of the producer, distributor-handler, and consumer classes. The direct benefit of the legislation must, however, be conferred upon the farmer. The welfare of the farmer must furnish the motivating force for applying regulatory mechanisms. The Department of Agriculture may have knowledge that a given market is disordered. If it has such knowledge, it should be authorized carefully to investigate and thereafter to apply the administrative process preliminary to legal regulation. The producers, as the primary beneficiaries of the act, should be enabled to make it legally mandatory for the administrative officials of the Department to take action when requested.

An outstanding weakness of the present Act is that insufficient opportunity is afforded to investigate the economic factors of the market prior to regulation. No study is now made of a given market until the immediacy of a proposal for regulation forces consideration. Opportunity should be afforded to study any given market in the United States and evaluate it in terms of order and disorder, with the result that findings may be made which have inherent integrity. A device which would assure deliberate and scientific investigation to the extent feasible in the present condition of the art of agricultural economics would immensely enhance both the legal and the economic merits of the regulation itself.

In order to accomplish such study it is desirable that a market regulation act be applicable to all agricultural commodities or their products produced in the United States, without such commodity limitations as are at present in the Agricultural Adjustment Act. The producers of any agricultural commodity should have it within their power to call for an economic survey and study and an administrative hearing concerning the conditions of the market. They should also be empowered to have the secretary proclaim the fair exchange value for the farmer of any commodity in interstate or foreign commerce and also to proclaim and publish whether in any given market there are unfair trade practices and other competitive conditions in the handling

of the commodity of so aggravated a nature as to be evils in interstate commerce. But regulation need not necessarily ensue from the proclamations and publications of the secretary of agriculture made as a result of the economic studies of his experts. Regulation, if it does ensue, should be only upon the foundation established by the preliminary economic survey.

Marketing agreements and orders as mechanisms are for the most part satisfactory. Other instruments could be devised, but the present instruments have the great value of experience already achieved. The passing years and the tests of litigation have uncovered hiatuses which were unnoted at the time of the enactment of the legislation. These should now be remedied. There are now assembled in Washington sufficient raw experimental data upon marketing agreements and orders to permit the enactment of perfecting legislation of the sort that will furnish a definitive test of the legality of effective marketing regulation, short of constitutional amendment. Is it longer desirable that legislation be enacted on a two-year basis, in the belief that two years can elapse before a case comes before the Court, and then to amend the legislation in anticipation of an adverse decision?

Apart from certain technical changes which can be made in the present marketing agreements and orders provisions, and stated in an act which can be legally supported, it is desirable that the marketing provisions now be welded into an integrated whole. So far as there is a theory back of the various marketing programs now in existence, certain commodities are regulated by marketing agreements and orders providing for limitation and allotment of the amounts that can be shipped in interstate and foreign commerce, provision is made for elimination of unfair trade practices, a mild form of agricultural self-government is established, and, in the case of milk and its products, minimum prices are fixed. Other sections of the Act provide for the purchase of commodities and their removal from the normal channels of trade and commerce, as a method of surplus reduction. Section 32 of Public, No. 320(74th Cong.), as amended, enables the secretary of agriculture to make various payments to handlers of agricultural commodities by way of benefit or indemnity to divert commodities from normal

marketing channels. Import quotas may be placed upon commodities which interfere with domestic programs. No consistent rationality runs through the appropriation sections, or through other provisions of the Act administered to supplement marketing agreement and order programs. They should now be arranged in rank order as factors in the orderly marketing of a commodity. Legal restrictions should be placed into a bill providing that diversion programs, indemnity payments, import limitations, and foreign-trade stimulation should all, together with limitations in interstate commerce and fair exchange value, be factors in orderly marketing. No payments ought to be permitted legally unless they center about a marketing agreement and order program for the commodity. Payments should only implement an existing program based upon regulation in interstate commerce under marketing agreements and orders. The diverse legal alternatives that exist in the Agricultural Adjustment Act should be closely woven together.

Since the theory ought to be orderly marketing in interstate commerce, the bill should provide satisfactory definitions of interstate commerce itself and obviate the possibility of evasion. The bill should further provide for effective co-operation with the states, not only by dovetailing interstate and intrastate commerce regulation, but by conferring upon the states at psychological places in the regulatory process certain powers and certain benefits within legitimate constitutional principles. This co-operation should be integrated about the key principle of the entire act, namely, an ordered market in interstate commerce for the commodity.

A way of achieving co-operation and of providing for a market ordered in fact is to provide for an element of regulation now lacking, namely, the arbitration and mediation of disputes. The secretary of agriculture should be authorized to settle disputes between handlers subject to regulatory provisions of the act (which would provide a new legal method for achieving peaceful and equitable agricultural labor relations) and workers, farmers, and others. Mediation powers should be conferred on the secretary as a concurrent condition to regulation. Arbitration powers

should be conferred, as an alternative, upon the secretary, and state arbitration laws should be invoked legally to support the arbitration awards made by the secretary. Thus, one of the prime deficiencies of the present Act could be obviated. The point need not be labored here that a market to be ordered must not be disrupted by labor and other disputes.

But if all these things—and more—are done, will there, in reality, be true agricultural adjustment? Will the farmer bring a fat pig to market and bring back a fattened pocketbook? "Their markets are controlled but not by the farmers"—Veblen's dark intuition still is written across the face of agricultural adjustment. We come, then, to the processors.

A commodity is grown upon a farm. It is harvested by the farmer and sold by him for eventual distribution and use. The handler of the commodity—the person who purchases the commodity to carry it to market—frequently must change the form of the commodity to make it available for distribution and consumptive use. The processor, at this point, is the *deus ex machina* of the marketing of a commodity. If no element of regulation is directed toward the processor, the regulation itself is aborted. Heretofore, there has been no true regulation of the processor, although it has been frequently contended by producers and consumers and impartial observers that the margin of profit made by the processor is such as to take from the producer his fair share of return. Regulation pursuant to the Agricultural Adjustment Act resulted too often in a benefit to the producer at the expense of the consumer. The processor never during the course of the administration of the Agricultural Adjustment Act suffered any diminution in the margin of his return, although his volume of business increased as a direct result of Administration activities. If a processing tax was levied upon him, he passed it on to the consumer, who paid for such benefits as the producer received. A statute which in all seriousness is meant earnestly and justly to regulate the marketing of food products must take into account the processing of such products from the point of view of the distribution of economic returns.

Definitions of interstate commerce may within a limited legal

range include processors. Decisions of the Supreme Court of the United States have held processing in numerous instances to be merely manufacturing, and manufacturing to be a local concern to the states, but the regulation of processing need not proceed upon the theory of interstate commerce regulation incorporated in marketing agreements and orders. It need not do so because the economically significant element in processing is the processing charge. Can the processing of the commodity be studied by a governmental agency for the purpose of ascertaining whether the charge is fair and reasonable and permits a proper distribution of benefit among producers and consumers? Can light be shed upon the obscure movement of the processor in the background of the market?

The farmer by the proposed legislation is to be given a fair exchange value for his product. It follows that the processor, too, should indirectly be confined to only the fair processing charge for his services. The undue profits which it is suspected that processors realize, because of strategic location, size, and organization, have never been thoroughly investigated by governmental agencies because of legal and other resistance to an investigation of the books and records to determine fair charge for services. It is evident that packers and stockyards legislation which is directly concerned with fair stockyard charges has no present relationship to the charge for processing, and it is suggested that, if a theory of orderly marketing is developed, determination of the fairness of processing charges becomes crucial in determining the fair exchange value for a producer's commodities.

Conceivably, it may be done as follows: The secretary of agriculture is now authorized to purchase large quantities of agricultural commodities for distribution for relief purposes by methods which will insure that such commodities do not enter into normal channels of trade and commerce. Yet the secretary has never been able to cause the distribution of wheat to relief clients. Wheat must of necessity be made into bread. Cattle must be processed into meat. Cotton must be processed into cloth. Consequently, by one means or another, contracts have been entered into by the secretary and the processors by which the

processors have sold their services to the secretary, being compensated by funds available through appropriations. These processing contracts applied to over two hundred million dollars of commodity purchases made by the secretary of agriculture from the latter part of 1933 to the close of 1935.[3] The purchasing programs continue. The processors have charged the secretary their normal charges. If the secretary is authorized legally to purchase, it seems only reasonable that he be authorized to determine what fair processing charges are. The situation is ripe for conferring powers upon the secretary to make yardstick studies of the reasonableness of processing charges, employing the analogy of the Tennessee Valley Authority. The secretary in making surplus purchases acquires huge quantities of agricultural commodities for the government. If such acquisition is constitutional, it should follow, under *Ashwander* v. *Tennessee Valley Authority* ([1936], 297 U.S. 288), that Congress may provide means for disposing of this government property. The secretary of agriculture should be empowered to process the commodities he purchases in order to put them into distribution form. In this way, indirectly, a logical element in regulation, the practical importance of which cannot be underestimated, may be achieved: governmental determination whether processing charges assessed by processors are fair and reasonable, or whether such charges are high and exorbitant and unjustly take from the farmer an economic return that is properly his. By establishing processing facilities under the theory of, and closely modeled upon, the Tennessee Valley Authority, the secretary may make accounting and statistical studies of processing of agricultural commodities in the United States which may remove from the sequence of agricultural marketing the dire enigma of whether or not large processors, strategically located, impede orderly marketing. The present weakness of agricultural marketing regulation, the small progress that has been made, and the tentative manner in which it has proceeded may be obviated by this legally and economically sound device.

It is not altogether true that the regulation of the activities of

[3] *Agricultural Adjustment, 1933 to 1935* (U.S. Dept. of Agriculture, 1936), p. 63.

handlers and distributors by means of marketing agreements and orders fulfils completely the role of the government in the proper ordering of a commodity market. Handlers and distributors are not, in economic reality, the direct channel between farmers and consumers. The physical transportation or movement of a farm product from the field or orchard to the eventual consumer is a function discharged by handlers and distributors, but the crucial activity in this process, for numerous agricultural commodities, is not the transportation of physical quantity to market but the change in the form of the commodity making it available for consumption. The Agricultural Adjustment Act seeks to limit the amount which may be transported to market but provides no means for evaluating the significance of processor activity in the marketing sequence of events. In part this has been due to the legal compulsions of regulation under the interstate commerce power rather than to the economic realities involved. Legally, handlers furnish the safest object of regulation. And, legally, it is extremely doubtful whether under the direct exertion of the interstate commerce power processors may be likewise regulated in the interests of full and complete regulation of the market. Legal expediency (based upon the authority of *Nebbia* v. *New York* [1934], 291 U.S. 502), for example, was the most important single consideration in confining the power to fix minimum prices under the Agricultural Adjustment Act to milk and its products.

But even the comparatively strong legal basis for regulation of handlers in interstate commerce has met adverse criticism by the courts. The chief method of regulation provided in the Agricultural Adjustment Act—limitation of the amount permitted to be transported—has, in the opinion of a number of courts, been merely a way of achieving production control. Two lower federal courts have held that this exercise of the interstate commerce power, even under the Act as amended after *Shechter Poultry Corp.* v. *United States* (*supra*), was merely an attempt to achieve an unconstitutional end (production control) by the exercise of a valid power (the interstate commerce power) (*U.S.* v. *Butterick*, [July 23, 1936, D. Ct. of U.S., D. of Mass.]; *Conley* v. *Wallace* [November 10, 1936, D. Ct. of U.S., D. of Col.]). Other courts

have held that production control could not be legally established by this exercise of the interstate commerce power and have sustained the legality of administrative action (*U.S.* v. *Edwards* [September 8, 1936; D. Ct. of U.S., S. D. of Calif. Cent. Div.]; *U.S.* v. *Groobman* [December 12, 1936, S.D. of Calif. Cent. Div.]).

What the Supreme Court of the United States may be expected to do is not at all apparent at the present time. But notwithstanding the strategies of legal attack and defense, from an economic point of view the underlying theory of present market regulation has been truly control (whether direct or indirect) of the production of agricultural commodities. This appears evident when a sequence of marketing agreements and orders are examined in an attempt to define their fundamental method. Much of the judicial attack upon the type of regulation contemplated by present marketing agreements and orders (an attack which will doubtless continue even if technical changes are made in the declaration of policy of the present Act) may be avoided if indirect regulation of the activities of processors through the exercise of powers other than the interstate commerce power alone is brought within the legal range of the regulation of marketing. As most lawyers know, and as most economists in this field will profit by discovering, it is as frequently disastrous to underestimate as to overestimate the intelligence of the courts. Again to permit processors who perform so important, if obscure, a function in marketing to pass unnoticed, and formally to regulate the activities of handlers and distributors alone, would, by making grotesque a theory of ordered marketing, force the courts to consideration of whether or not the interstate power asserted is not, in reality, an attempt to control production.

A final word may be said as to the necessity of a thoroughgoing revision of regulation in this field. Subtle and sanguine as the farm chiefs of the present administration are, there is always implicit in their works the need for a new subtlety. When two subtleties meet in Washington, they breed a third. Yet the most evident desideratum for legislation as an art is that it be characterized by rational form and some degree of permanency. A

statute becoming a law of the land normally is a result of years of private discussion and debate. As a social problem persists and public opinion precipitates, solutions are offered, some hasty, some deliberate. When enough of these solutions are presented and the outlines of the problem are sufficiently clarified for legislative action, proposals are offered and pressure brought to incorporate the solutions into law. A statute normally represents a compromise between conflicting points of view, and when enacted is expected to be a relatively permanent addition to the functions of government. This is demonstrated by the expansion of the statute-books. Each legislative session adds new laws; few remove laws already enacted. The complexities of modern civilization give rise to great numbers of social and economic problems, and for the solution of the gravest social and economic problems the power of the state is invoked, often, be it said, at some sacrifice of reasoned understanding. If it is socially undesirable that stolen automobiles be made an object of interstate commerce and a statute is enacted declaring it unlawful to transport stolen automobiles in interstate commerce, such enactment remains on the books indefinitely. The march of events does not affect the question of the legality of transportation of stolen automobiles so long as it is the opinion of a predominantly influential section of the community that stolen automobiles are evil chattels. Events, it is true, may make it desirable more drastically to regulate such transportation or more thoroughly to enforce provisions forbidding the transportation; but it may reasonably be anticipated that the statute is of long duration. The Agricultural Adjustment Act, however, differed in its inception and differs now in a marked degree from the customary type of regulation.

The Agricultural Adjustment Act was enacted during the course of a national economic emergency. Its preamble is a terse statement of imminent national disaster. The Act still carries with it the compulsions of national emergency. In theory it is somewhat analogous to a type of economic legislation enacted during the World War—granting to the government extraordinary powers over the domestic affairs of the country in order

that the nation might successfully wage war. The war legislation passed with the war. Present economic planning and legislation concerning war deals primarily with the next war. National economic emergencies, it is true, have no armistices, nor can they be terminated by official order; and it is increasingly clear, there being no precise beginning and no precise end, that the passing years changed the nature of the emergency faced by agriculture. If wisdom is to be offered to the wise, it is that their work has only begun. To many of those to whom for seven lean and tortured years the economic depression has been the great contemporary fact, the nearly forgotten but easily recalled prosperity that seems to be returning, together with fresh potentialities of war abroad, tragically forecasts an inevitable new and greater emergency. This sensitivity to the implications of contemporary economic processes may yet prove to be the sole value that those, if there really are such, who endeavor to realize the common good through reason may salvage from the experiences of the last two decades.

BOOK REVIEWS

The Westminster Bank: Through a Century. By T. E. GREGORY, assisted by ANNETTE HENDERSON. New York: Oxford University Press, 1936. 2 vols. Pp.: I, xii+396; II, vii+355. $10.00.

Recent years have contributed much to the literature dealing with the history of banking in England. The researches of Dr. R. D. Richards have thrown a flood of light on the early origins of commercial banking in the days before the creation of the Bank of England, while the developments of the nineteenth century are admirably portrayed in that series of house histories of which this is the fourth.[1] Is it too much to hope that the Bank of England may be inspired to celebrate its approaching two hundred and fiftieth birthday by a similar official history, or that some of the older banks in the United States may wish to emulate the example set by their English competitors?

In many senses the present study is more interesting than its predecessors. Professor Gregory brings to his task a fund of historical and theoretical knowledge that is seldom equaled and never excelled by contemporary economists, and the story of the three major strands that ultimately united to form the present Westminster Bank is one that offers admirable scope for his abilities.

Each of the other large joint-stock banks that we know today grew out of provincial institutions and migrated to London at a comparatively late stage in their development, but the London and Westminster Bank was from its very inception a London bank. Its early years were colored by its struggle, under the able management of J. W. Gilbart, with the Bank of England; and, when that struggle had reached a victorious issue and the foundations of joint-stock banking in the metropolis were firmly laid, the remainder of its history, up to the amalgamation with the London and County Bank in 1909, is intricately woven into the story of the development of the London money market. To that development the "old Westminster" contributed much, by reason of its own strength and efficiency and also because of

[1] W. F. Crick and J. E. Wadsworth, *A Hundred Years of Joint Stock Banking* (London, 1936); P. W. Matthews and A. W. Tuke, *The History of Barclays Bank Ltd.* (London, 1927); Hartley Withers, *The National Provincial Bank, 1833–1933* (London, 1933).

the eminence in the city of many of the men who were associated with it.

It would have been hard to find two stories that would contrast more vividly at every point with the history of the old Westminster than those of the London and County Bank and of Parr's. The County, a provincial joint-stock bank with which Joplin was closely associated, suffered in its early years from such inefficiency (and even criminal fraud) in its management that it might well have succumbed under the crowning blow of the Sadleir frauds. Yet it put its house in order firmly and effectively and was an important rival of the Westminster in size and strength at the time of the amalgamation, although the territories of the two institutions were distinctly complementary. Parr's, on the other hand, was the result of a long series of amalgamations among private banks in the midlands and west of England which, when it combined with the Westminster in 1918, brought to the new "London County Westminster and Parr's Bank" important connections in those industrial and trading areas.

Professor Gregory tells each of these three stories well, and supplements the tale by several useful statistical and documentary appendixes. Moreover, he offers, at the end of the second volume, a group of biographical essays dealing with outstanding persons attached to the Westminster Bank or its constituent institutions. The group is an impressive one, and the essays on Lord Overstone, J. W. Gilbart, and Walter Bagehot are particularly delightful reading. Praise is due also for the format of these two volumes. In the matters of typography, binding, and illustration the publishers have succeeded in producing an unusually attractive book that is fully worthy of the author and the story that he tells.

F. CYRIL JAMES

University of Pennsylvania

Working Conditions and Labor Legislation, Vol. III: *History of Labor in the United States, 1896–1932*. By DON D. LESCOHIER and ELIZABETH BRANDEIS. New York: Macmillan Co., 1935. Pp. xxx+778. $4.50.

Labor Movements, Vol. IV: *History of Labor in the United States, 1896–1932*. By SELIG PERLMAN and PHILIP TAFT. New York: Macmillan Co., 1935. Pp. viii+683. $4.00.

These two volumes complete Professor John R. Commons' and his associates' four-volume *History of Labor in the United States*. Volume

IV takes up the story where Volume II left off in 1895 and carries it down to 1932. Volume III deals with working conditions and labor legislation for the same period. It has also an Introduction by Professor Commons which is one of the best representations of his point of view, his practical approach, and both the strength and the weakness of his method. Volume III is written by Don D. Lescohier and Elizabeth Brandeis and Volume IV by Selig Perlman and Philip Taft. As is to be expected from the Wisconsin school, both volumes are thorough, well documented, and exhaustive in their search for detail. There is a lack, however, especially important in Volume IV, of an intimate and realistic understanding of the internal politics of industrial relations which leaves the work too largely descriptive.[1]

Perlman's conclusion to Volume IV presents again the point of view of the Wisconsin school. He seems to believe that the labor movement in the United States was experimental until 1896 when—as represented largely by Samuel Gompers—it had reached certain conclusions which are still found in 1932 to be satisfactory. The chief of these is that collective bargaining and agreement with employers—constitutional government in industry—is the major if not the only function of the labor movement.

The possibility of constitutional government in industry, however, depends not only on labor but on government and employers, and Volume IV is full of evidence that neither government nor employers have generally accepted the principle of the trade agreement. Since these volumes were completed the Supreme Court has denied constitutional government to the coal industry, for reasons that will certainly make the Labor Disputes Act unconstitutional or insignificant.

In Volume IV we find a rather peculiar casting-up of accounts at the beginning and end of the period. Perlman and Taft give eleven conclusions reached by the "labor movement" by 1896. These are: (1) Producer co-operation is a failure, especially when it is a business success. (2) Farmer-labor co-operation leading to politics is impossible. (3) Revolutionary action is worse than useless. (4) Government is to be distrusted. (5) Legislative reform is to be minimized. (6) Political action is best confined to lobbying and the support of individual friends of labor and the attempt to defeat individual opponents. (7) Intellectuals are to be avoided, in part because they are more at home in

[1] This could be corrected somewhat by a study of the mass of correspondence found in the American Federation of Labor archives which seems to have been neglected.

politics and are likely to be socialists. (8) Dual unionism is the unforgivable sin. (9) Craft is the limit to which solidarity can go. (10) Immigration is to be discouraged, especially by immigrants. (11) The trade agreement reached by collective bargaining is the proper objective of all labor activity.

In their concluding chapter Perlman and Taft review these eleven certainties arrived at by 1896 and find that with all the experience of labor between 1896 and 1932 these results remain correct with nothing added and nothing taken away.

It is well known that liberals and radicals believe the American Federation of Labor leadership to be reactionary. It is known, too, that Commons and his associates are in sympathy with A.F. of L. officialdom and its point of view. But this reviewer submits that Perlman's and Taft's conclusion that A.F. of L. leadership has learned nothing and forgotten nothing, that its "mental baggage" of 1896 is its mental baggage in 1932, is the most damaging criticism ever launched by informed persons at A.F. of L. officialdom.

There has been some change since 1932, and Perlman and Taft could not, of course, have foreseen the split in the Federation, now led by John Lewis and the Conference for Industrial Organization. This in itself may mean the end of the Gompers era. It may mean that experimentation, which seems to have stopped in 1896, has been resumed since 1932.

For the rest, Volume IV is a fine piece of work. It properly pays relatively little attention to formal organizational matters but substitutes carefully documented discussions of labor behavior in a variety of fields, used to illustrate success and failure and the methods and reasons therefor. Nothing is omitted, and the organization of material is infinitely better than that of the first two volumes.

Volume III is divided into two sections—"Working Conditions," written by Don Lescohier, and "Labor Legislation," written by Elizabeth Brandeis. Lescohier's contribution in sections i and ii is a study of the wage-earning population, wages, hours, unemployment, unemployment relief and insurance, and vocational training. Section III deals with employers' practices and policies: scientific management, personnel management, employee representation, health and safety plans, profit-sharing, and old age pensions.

Miss Brandeis, aided by Miss E. S. Johnson and Mr. Harry Weiss, has written a section on our meager labor legislation. It deals with child labor legislation (Miss Johnson), women's hour and wage laws,

hour regulations for men, employers' liability and workmen's compensation (Mr. Weiss), old age pensions and unemployment compensation, administration of labor laws, and labor legislation and the courts.

The conclusion of the last section and further decisions of the Supreme Court suggest that labor legislation worth enacting must await a new orientation among labor officials, if not a labor party of some significance, which would, of course, conflict directly with the "pure and simple" philosophy of A. F. of L. officialdom so much admired by the founder of the Wisconsin school and his followers.

NORMAN J. WARE

Wesleyan University

Crises and Cycles. By WILHELM RÖPKE. Adapted from the German and revised by VERA C. SMITH. London: William Hodge & Co., Ltd., 1936. Pp. xi+224. 10*s.* 6*d.*

This book—a considerably expanded and largely re-written version of the same author's *Krise und Konjunktur* (1932)—will undoubtedly irritate those who are not in essential sympathy with the fundamental positions which determine the nature of the author's approach. This approach may be described broadly as anti-empiricist on the question of method in business-cycle study (pp. 64 ff.), synthetic with respect to the theoretical explanation of the cycle (pp. vi, 61 ff., 97, 134), although most emphasis is placed upon the monetary factor (pp. 39, 107 ff., 111 ff.), internationalist and "liberal"—in the European sense of the latter term—on matters of long-run economic policy (pp. 3 ff., 85, 139, 147 f., 162 ff., 188 ff.), and moderately "expansionist" with respect to the immediate problem of combating the "secondary depression" (pp. 119 ff., 177 ff., 198 ff.). The points on which those in sympathy with this approach would be inclined to cavil, on the other hand, are essentially minor matters which should not prevent the book from having a distinctly favorable reception from English and American readers.

The impressionism, for example, which necessarily characterizes the chapter on "The History of Cycles and Crises" (chap. iii) may raise more than one mild protest. To take one instance: The reviewer has seen statistical evidence—recently discovered and as yet unpublished—which casts considerable doubt upon the validity of the author's statement to the effect that the crises of the eighteenth century "were more or less fortuitous accidents occurring outside the actual produc-

tion process, ... and lack the totality as well as the cyclical nature" of later crises (pp. 38 ff.). It would be as easy to pick out statements in the chapter on "The Causes of Crises and Cycles" (chap. iv) and in that on "Trade Cycle Policy" (chap. v) which must be regarded as extreme in their implications, even by one as sympathetic to the author's general position as the reviewer. It would be equally easy to point out instances in which one would have wished for a more pointed modernization of ancient truths—as in the author's discussion of "over-production" (pp. 77 ff.)—or a greater degree of articulation in the statement of specific doctrines—as in his discussion of the "principle of acceleration" (pp. 103 ff.), in which Professor J. M. Clark's well-known theorem is lumped with other propositions with which it has only a remote connection.

Yet to seize upon these passages in a book generally distinguished for clarity of statement and—at least in the eyes of "liberals" with a "theoretical" orientation—for moderation in judgment, would be to do serious injustice to a book which deserves a wide audience. The author's gift for vivid analogy should deepen the impression which the book may be expected to make upon non-experts; and experts will forgive the occasionally repetitious and even sententious character of certain passages as they realize that it is precisely these passages which will probably have the most beneficial influence upon those who are essentially amateurs in the subject.

This is a book, however, which is by no means to be recommended only to the general public. The reviewer cannot better indicate his opinion as to the value of the book as a whole than by expressing the hope that an American publisher may bring out an edition for use in college courses on business cycles. If such an edition should be forthcoming, it would be easy to correct such minor blemishes as that which appears on page 26, where "elasticity of demand" is strangely defined.

ARTHUR W. MARGET

University of Minnesota

The Balance Sheets of Imperialism: Facts and Figures on Colonies. By GROVER CLARK. Published for the Carnegie Endowment for International Peace, Division of Economics and History. New York: Columbia University Press, 1936. Pp. xii+136. $2.75.

Some twenty pages of text buttressed by more than one hundred pages of statistical tables, lists of treaties, and Bibliography constitute

this blast at the common fallacies about the profitability of colonies. The volume under review is primarily for professional students of such problems, and it serves as factual underpinning for a popularized exposition of the same subject published simultaneously under the title *A Place in the Sun* (Macmillan).

> Three main claims have been made as to the value of colonies: that they provided important outlets for population; that the possession of them gave important opportunities for profitable trade which otherwise would not be available; that control over the sources of raw materials in colonies added to a nation's security in time of war and gave it important advantages in time of peace. The actual record of colonies, especially for the past half century when the taking and administering of colonies has gone on under modern conditions, demonstrates conclusively that each of these three claims is essentially fallacious [p. v].

There you have the argument in a nutshell. It is supplemented by a few paragraphs on pages 17–19 which advocate, as "a way out" of the ruinously costly and conflict-breeding colonial situation of today, not the removal of all outside control over colonial areas (some areas could carry on reasonably satisfactory administrations of their own now, many could not) but real equality of economic opportunity for nationals of all countries in all colonies, plus assumption of responsibility by the society of nations as a whole, acting through the League, for the maintenance of that equality.

With the general conclusions of fact one can have no quarrel whatever—save that they might be stated more carefully to bring out the distinction between economic gain that can be held to have accrued to the industrialized world as a whole from the opening of colonial trading areas or raw material sources and the differential economic gain that is (falsely in most cases) alleged to have come to particular colonizing countries from political sovereignty over their particular colonies. It is this latter which Mr. Clark calls in question, and it is the nationalistic element in colonial expansion which has contributed most of the red-ink entries to its economic ledgers. Mr. Clark's "way out" amounts to denationalization and mondial supervision (i.e., supervision through world-wide agencies) of colonial administration. This is the identical path which the present reviewer has elsewhere argued must be entered upon with respect to international investments if they are to be less virulent centers of international conflict, and it is undoubtedly the general direction in which solutions for nearly all the so-called economic conflicts in international relations must be sought.

What may render all such solutions practically impossible is the fact that powerful individual and group interests do benefit, at least in the short view, by many of those nationalistic policies which harm the people of a nation as a whole, and these interests subsidize the fallacies which reason would reject. Mr. Clark should have pointed this out somewhere in order to explain the obvious contradiction between the reasonable view he presents (assuming that we wish to relate the balance sheet to the interests of all the people) and the actual practice of colonizing nations.

The Balance Sheets of Imperialism is an effective tract, useful, well done on the whole, to be highly recommended as ammunition to those who strive to fight prevalent misconceptions. Technically it is not faultless. The total of imports and exports of a colony's trade with the mother-country is constantly labeled the "value" of the trade, and even the verbalism "was worth" so much is used. "Turnover" would be less misleading where comparisons are being made with colonial expenses. Constant Southworth (*The French Colonial Adventure* [1931]) developed interesting techniques, less crude than those of Mr. Clark, for estimating the economic gains and costs of colonies, and they could have been drawn upon to advantage. Strange that the Southworth study, probably more directly in point than any other work thus far, should be completely missing from the Bibliography! "British government bonds yielded, in 1930 to 1934, an average of 3.8 percent, or only a little more than half the proportion even of the ordinary defense expenses to the trade with the British countries," and thus the defense expenses alone of having an empire have exceeded any reasonable estimate of profits made on trade with the empire (p. 13, and p. 12 for a similar comparison concerning France). But the ratio of bond income to principal is not the most appropriate comparison; ratio of net profits to total trade turnover would be better, and perhaps even more favorable to Mr. Clark's case.

It is argued (pp. 16, 102, 104) that almost without exception a smaller proportion of each raw material is now being produced in the leading supplying countries than was the case ten years ago—thus, there is a trend away from concentration, making monopoly more difficult. Exactly the opposite trend—i.e., toward concentration of sources—has been vouched for by such authorities on mineral production as C. K. Leith (*World Minerals and World Politics*, p. 150) and Sir Thomas Holland (in *International Conciliation Pamphlet No. 266*, p. 15). In view of this fact, better evidence than a comparison of 1925–29

figures with 1933 or 1934 figures should be adduced, especially since the trend is not very striking and might well be ascribed to the difference between boom and depression conditions in the years chosen.

EUGENE STALEY

University of Chicago

Building Society Practice. By G. S. RILEY. London: Macmillan & Co., Ltd., 1935. Pp. xvi+228. 10*s.* 6*d.*

The Thrifty Three Millions: A Study of the Building Society Movement and the Story of the Abbey Road Society. By SIR HAROLD BELLMAN. London (Abbey House, Baker Street, N.W. 1): privately printed, 1935. Pp. xii+357.

Bausparen in England, Amerika und Deutschland. By ALEXANDER BLOCK. Berlin: Bauwelt-Verlag, 1931. Pp. 494.

The spectacular success of the British building-society movement in the last few years has attracted much attention and raised a number of interesting issues. The first of the three books under review has, however, almost nothing to offer to better our understanding of the movement and the underlying forces. Riley's study is a purely technical compilation about the internal (business) organization of the English societies. It goes, chapter by chapter, through the individual "departments" and their managerial apparatus. It is written apparently for the sake of the accountant or employee who wants to learn about his functions and obligations but does not want to be bothered with further problems and implications of his own doing.

Bellman's book is far more ambitious. Written by a leading director of one of the largest societies in England (the Abbey Road Society), it amounts to an enthusiastic report of the growth of that institution and of the movement in general. Some of the enthusiasm could readily have been sacrificed in exchange for a greater measure of factual information and a more critical approach. Is it, for example, permissible to present as a "history" of the associations an account which scarcely mentions the breakdowns which they had to face periodically? Or to ridicule the question of liquidity (pp. 150 ff.) because the share- and interest-withdrawals of some 13–19 per cent of the total liabilities (to shareholders, not to depositors) in the years 1921–32 had been met without major difficulty? Of course, the period happened to be one of fast-growing inflow of savings out of which the withdrawals could be

easily met. Nor need we be convinced, in the absence of further proof, that, since a society "ordinarily" does not advance more than 80 per cent (!) of the property value and since the margin widens with each instalment payment, there is "sufficient margin to safeguard .... against any loss" (p. 163).

Mr. Bellman is essentially a propagandist; Block is far more impartial and scientific-minded. As a matter of fact, his is at present probably the only comprehensive study of building societies which can claim scientific status at all. With characteristic German thoroughness, the author discusses the experiences, business technique, legal and administrative status, financial records, and some social achievements of the movement in the three leading countries. He seems to have dealt with emphasis on virtually every question of minute detail relevant to his subject—although he has neglected a few phases which the economist would be inclined to regard as of primary importance, such as a comparison of financial and economic results with those of "competitive" institutions, the influence exerted by the associations in the housing field, etc. But even so, Dr. Block's contribution is most valuable as the only general source of reliable information on the subject. It would be most desirable to have this standard field study either brought up to date and translated or else supplemented by a worthwhile book in English of at least similar qualitative standards.

Two points, properly emphasized by Block, seem to be worth special mention. Contrary to Anglo-American practice, the German associations are still in an entirely unsatisfactory experimental stage; they have only one type of member-customers who are simultaneously depositors and (would-be) borrowers, with all sorts of malpractices developing in the distribution of funds among them. In addition, the so-called "collective" system usual in most German units means the compulsory adherence of the members for long years. Block rightly points out the economic and social shortcomings of this practice. For England and America, he fails to visualize an essential issue, the role which this type of credit institution has played within the framework of the entire credit structure and in its cyclical fluctuations.

MELCHIOR PALYI

University of Chicago

American Diplomacy: Policies and Practice. By BENJAMIN H. WILLIAMS. New York: McGraw-Hill Book Co., Inc., 1936. Pp. xii+517. $4.00.

A History of American Foreign Relations. By LOUIS MARTIN SEARS. 3d ed., revised and enlarged. New York: Thomas Y. Crowell Co., 1936. Pp. xiv+706. $3.50.

Both these books have impressed the reviewer with the variety and complexity of the diplomatic dealings of the United States. Dr. Williams deals primarily with current policies, going back beyond "current history" only incidentally; and yet he constantly finds severe compression necessary. This is most evident in Parts I and II on "Regional Policies" (150 pp.) and "Economic Diplomacy." In 1929 Dr. Williams covered the *Economic Foreign Policy of the United States* in 410 pages; that sort of material is now condensed mainly into the 76 pages on "Economic Diplomacy," although the 85 pages on "Conduct and Machinery" contain illustrative references. "Policies of Peace and World Organization" have more adequate space in 150 pages.

The subject matter is well presented, with every consideration for the reader. The reviewer noted scarcely any errors of fact. Altogether the book may be recommended to readers desiring a survey of the subject or an up-to-date reference book—especially if they are sufficiently critical to reject much of Dr. Williams' economics and of his economic interpretation of history.

Dr. Williams apparently is one of the liberals so impartial that they will slander their own government without thorough investigation. Thus he insinuates that in the nineties the American government forced concessions from Latin-American countries by threatening penalty duties but offered concessions to the European powers because the former were weak and the latter strong. Yet his own earlier work explains that domestic politics had exempted from duty the leading products of Latin America, and hence had necessitated the penalty method.

Various quantitative judgments are at fault. The open door in the Philippine Islands, 1899–1909, was not merely nominal, nor was it "slammed" shut in 1909. The potential penalty duty on coffee in 1897 did not threaten "disaster" to Brazil.

Dr. Sears's 700-page chronicle of American foreign relations strikes the reviewer as a useful handbook for an economist to have in his

library, but it will not be a prime aid for him in his own subject. Reciprocity with Canada in 1854 is given three pages (because of Professor Tansill's monograph?), the frustrated reciprocity of 1911 receives 5 pages, and there is a paragraph on reciprocity with Canada effective January 1, 1936. But the 1911 account is marred by a statement that Great Britain was granting imperial preference; by a curious insistence that the Payne-Aldrich "elastic clause" or "sliding scale of imposts" was vitally involved; and by a concluding assumption (in the face of Britain's return to protection) that where industrial interests preponderate they must advocate free trade. The reference to the 1936 reciprocity with Canada implies that it may be the first of a series, there being no reference to the Trade Agreement Act of June, 1934, or to the other eight trade agreements signed before that with Canada became effective.[1]

Both books show the influence of Japanese propaganda. Dr. Williams thinks that in South China and in Manchuria the population is mostly non-Chinese, and Dr. Sears thinks that a country which has one written language, as much geographic and economic continuity as the United States, more racial unity than any major country of Europe, and a more ancient cultural unity than any other country is cleft by deep divisions "geographic, economic, racial, historical, and most of all linguistic."

Dr. Williams' work should receive much acclaim, as it appears to accept most of the current sentimental and isolationist assumptions and wilful wishes—e.g., that isolationist neutrality is the best American policy, that a vague drift toward international organization which may lead to something effective about the year 2100 constitutes satisfactory progress, that predatory Japan must be allowed to expand and is likely to collapse under the burden of her militarism and her territorial ambitions. There are a few contrary suggestions (e.g., that a system of world-peace is of the highest consequence to the United States) or vague expressions of doubt (e.g., concerning the validity of the economic interpretation of history). But in no concrete case, I believe, does he reject the economic interpretation or intimate that political considerations or military ambitions may have dictated certain policies.

[1] The negotiations with Cuba and Colombia for trade treaties (referred to on pp. 629 and 631) preceded those finally made effective as trade agreements. On p. 613 the "Smoot-Hawley Tariff" of "1931" "stirred the States of South America to formation of a customs union aimed against ourselves."

Dr. Sears believes that a history should be a guide rather than a dictionary, but his guidance is decidedly questioning and questionable, notably in regard to Far Eastern policy and peace. On pages 608, 618, and 619 he believes that world-disapproval may give pause to reckless imperialists, that the non-recognition policy was a minatory warning to Japan, and that there exist "peaceful methods of coercion"; but on page 626 he sees that the United States reacted verbally and futilely to Japan's bold bit of piracy.

It may be argued that teachers who add the compilation of books to their teaching cannot be expected to be also so deep and critical as to break away from the *Zeitgeist;* but how we do need critical, constructive, and aggressive thinking in this field of American foreign policy!

BENJAMIN B. WALLACE

Washington, D.C.

The Institution of Property: A Study of the Development, Substance and Arrangement of the System of Property in Modern Anglo-American Law. By C. REINOLD NOYES. New York: Longmans, Green & Co., 1936. Pp. xiv+645. $7.50.

"Property" (both substantive ideas and legal procedures) is the very framework of the modern order. It is older than any system of law.[1] It has served as an organizing force in society since before the origins of legal systems. It has never been adequately analyzed as to the details of its functioning, and Mr. Noyes has given us the first comprehensive analysis of the *structure* of this elaborate and pervasive institution.

This study gives due attention to both substantive concepts[2] and to

[1] "The law finds the institution of property in existence, as well at the earliest as at all later stages of growth, and, far from creating its varieties, is occupied only in defining, maintaining and validating them" (p. 18).

[2] "If we disregard the form and look only through it to the substance . . . . we fail to appreciate the ways in which the substance is functionally constrained and even structurally modified by the form. On the other hand, if we look exclusively at the form we are misled as to the true structure and functioning of the reality beneath the form. But if we think of form as the costume of reality . . . . as partly an expression of that reality and partly a tradition derived from its own [the form's] history . . . . constructed from the materials available at the time upon general patterns acquired from the past; confirming in some varying degree to utility and in some respects to abstract notions of an intellectual aesthetic; we will then have, perhaps, the most helpful point of view in coming to grips with the nature of such social phenomena" (p. 19).

the legal forms through which the substantive concepts operate; it discloses that, while the forms of procedure influence profoundly the substance, yet the forms of procedure vary more often and in greater degree than does the substance;[3] and it further indicates the necessity of guarding carefully against certain confusions, the sources of which are carefully and accurately pointed out.[4]

In its main outlines, the book consists of:

1. Some two hundred pages which discuss Roman social and legal origins of many of the diverse and varying notions which comprise the dominion-ownership-property concept-cluster. This part of the work is admittedly conjectural in large part, although it is fortified by Appendix I, which sets forth interesting etymological matters relative to legal terminology.

2. A historical and interpretative account of the development of politico-legal protections and extensions of the property concept-cluster in both the Roman and the Anglo-Saxon legal systems.

3. An analysis of the ramifications of the property concept-cluster (as a series of personal relationships) as these ramifications are shown by the decisions and dicta of courts and other legal authorities. This part of the work is largely a series of some four hundred and ten short extracts; but, with the extensive classification of the ideas covered, the whole does give a pretty accurate picture of what has been done and said. This part of the book deals with both substance and procedures; it indicates clearly the abstract, conceptual character of "property"; it demonstrates rather clearly that the social realities are outgrowing (and, indeed always have outgrown) both the substance and the procedures of "property."[5]

[3] "For in all ages and localities the individual systems of law have only plastered with their conventions and concepts the somewhat uniform structure of the current manner of thinking and of living. Thus these vestments and trappings of property are but disguises of a littly varying body. Fashions in clothes vary widely according both to time and place. But fashions in bodies are conservative" (p. 20).

[4] "The statement of the legal idea [in the form of a legal 'principle'] is one thing, its application another, and the social reality behind it still a third. Each influences the others. We cannot safely ignore any of the three if we are to secure a definite and accurate analysis of the structure of property for purposes of economic science" (p. 24).

[5] "Thus we find, both from our historical studies and from our study of modern law, that the legal concepts of 'ownership' and possession are of very little use in analyzing property. They are by far too indefinite. And this objection is by no means a matter of academic or theoretical interest. The fact is that the devious devices of modern economic life have escaped from the grasp of these primitive

4. An elaborate analysis of "the substance and structure of modern property," "stripping off the legal clothing," in order to study the "anatomy" and the "skeleton," rather than the clothing or the physiology. Withal there is adequate appreciation of the place of property in the fabric of the social order and understanding of the relation of property to other portions of the fabric.

Taken as a whole, the book seems a remarkably careful piece of work. Critical evaluation would demand intimate knowledge of the history of Roman law and social institutions, English and Continental social history, semantics, etymology, the details of the developments of Anglo-American law and all of its modern trends. Therefore, for all this reviewer knows, the book may contain errors of detail. But Mr. Noyes has taken great pains to distinguish statements of fact from matters of inference and conjecture, and to warn the reader of the dangers of generalization and of the perils of lack of due care and discrimination as to the significance of certain chronological coincidences. The book does not advocate or even suggest legal or social reforms; it is a report of a search for facts as to what the institution of property *has been* and as to what it *is*.

Not only is the book absorbingly interesting to the student of institutions, but it seems an important contribution to the knowledge of those who would know what our social institutions "are all about." The historical matter is valuable, as showing the accidental character of the property concept; and the analysis of modern concepts, together with the discussion of development, may prove useful to later generations. It is not impossible that the institution of property may some day be subjected to the indictment that, however indispensable it may have been in the past, it may prove inadequate and ineffective for the purposes of an advanced social order. Whether or not such a situation ever arises, this book is important as an aid to our seeing property for what it is: a hodgepodge of sometimes inconsistent ideas grown together at random and by force of accident; a concept-cluster continually growing but never quite catching up to social realities; a cluster of artificialities which defies precise definition. And yet, as Mr. Noyes points out, for all the chaos of language found in judicial opinions and elsewhere, the results achieved by the courts in working with these abstractions are not nearly so chaotic as one might fairly expect.

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legal ideas. If we are to comprehend these facts at all we need to submit them to the much less vague and indeterminate method of qualitative analysis which we have outlined in the foregoing pages" (p. 521).

Much remains to be done in the field of property. We need a critical examination of the functioning of property (how does it work as an organizing force?), as well as the examination of the skeleton and the anatomy, which Mr. Noyes has given us; we need to know more of the relationships of property to certain other institutions, such as the "right" to work, the "right" to carry on business, and the "right" to take private profit. When all of these things have been done, we shall have a basis for an intelligent evaluation of property as an institution. Mr. Noyes's book is an important beginning, and, as far as the reviewer is able to judge, a sound beginning, of the laying of the foundations of desired knowledge in this field.

JAY FINLEY CHRIST

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The Distribution of Wealth: A Factual Survey Based upon Federal Estate-Tax Returns. By WILLIAM LEONARD CRUM. Boston: Bureau of Business Research, Harvard University Graduate School of Business Administration, 1935. Pp. iii+24. $0.50.

The main title of this bulletin is likely to lead the reader to expect a study much more inclusive than the one which Dr. Crum has made. He has not investigated distribution of wealth among the living but has covered only the estates of decedents. Moreover, in the typical year 1930, the study covered only 7,028 of the 1,343,356 persons reported by the Bureau of the Census as dying in that year. However, the 7,028 were presumably the wealthiest of those who died; hence a study of the reported sizes of their estates has considerable significance in connection with the question of possible changes in the concentration of wealth in the hands of a very limited number of persons. Since, however, no attempt is made to relate the wealth of the small minority studied to the total private wealth of the people of the nation, the light thrown on the question of concentration is decidedly limited.

In his analysis Dr. Crum follows the lead of Frederick Macaulay and plots the data in the form of a simple smoothed histogram on double-logarithmic paper. Since the data represent only the extreme right-hand segments of the entire curves, the graphs in all cases slope downward to the right. Dr. Crum shows that steepness of the slope of a graph of this type represents approach to equality of distribution. It is clear that such is the case, for if all persons had the modal wealth, the graph would be nothing but a point located at the mode. If there

were but slight inequality, the distribution would be represented by nearly vertical lines meeting at the mode. Dr. Crum points out, therefore, that the tendency to assume that steepness of this type of curve is correlated with inequality is the reverse of the truth.

Dr. Crum classifies the estates in various ways and plots a logarithmic histogram for each. One or two of the curves approximate straight lines, but most of them are noticeably convex upward. Dr. Crum measures the typical slopes of the various curves and finds that these slopes vary to a considerable degree. To the casual observer, however, the remarkable thing about most of the curves is their similiarity in slope and shape. In general, it appears that Dr. Crum's findings tend to substantiate Pareto's view that there is a universal influence tending, under competitive conditions, to make wealth distribution assume a definite mathematical form. However, Dr. Crum emphasizes the differences rather than the similarities.

He also analyzes, for the years 1922–33, inclusive, the changes occurring in the compositions of the estates. These changes clearly reflect public opinion concerning the respective merits of stocks and bonds as investments. It is not surprising to learn also that crushing income-tax rates have forced large investors to seek protection by investing in tax-exempt bonds.

On the whole, the study deals effectively with the limited field which it covers.

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State Taxation of Banks. By JOHN BROOKS WOOSLEY. Chapel Hill: University of North Carolina Press, 1935. Pp. vii+133. $2.50.

This is one of three monographs which have recently appeared upon the subject of state taxation of banks. The two others are by Dr. Ronald B. Welch[1] and the National Industrial Conference Board.[2] The present volume traces the evolution of congressional restrictions[3] upon state taxation of national banks and of the legal issues involved,

[1] "State and Local Taxation of Banks in the United States," *New York Tax Commission Special Report*, No. 7 (1934).

[2] *The Taxation of Banks* (1934), prepared by Mr. Lewis H. Kimmel, of the research staff of the Board.

[3] Popularly referred to as sec. 5219 of *United States Revised Statutes*.

evaluates the methods now in force, and offers a solution of the present problem. The author finds the net income, the excise, and the dividends tax, as well as the general property rate on shares, unsatisfactory, and concludes that the uniform tax on bank shares is the most satisfactory method but not a complete solution at present because of the restriction of its rate to that upon other moneyed capital. His solution, therefore, of the whole problem is

> simply that the several states shall be permitted to tax (*a*) the real property of national banks as other real property is taxed and (*b*) that the shares of such banks may be taxed by and under state authority subject to the limits that the rate imposed shall not exceed an agreed per cent, say, 1½ per cent, of the book value of said shares minus the assessed value of the real property, nor shall the rate be higher than that imposed by the taxing state on banks operating under state charters [p. 128].

The device of a maximum rather than the present principle of comparatives as a means of rate limitation would, as the author points out, have the important advantage of freeing the states to develop their tax structures without reference to their taxation of banks. The advisability of restricting the basis is, however, more debatable. A good deal may be said for a broader formula, involving restriction by maxima, but allowing freedom of state experimentation with other bases of bank taxation.

With reference to the author's conclusion that taxation of banks by general property rates has been discriminatory (p. 106), it should be said that the evidence cited is not conclusive. It does not prove disproportionate tax burden upon the banks. The question of tax discrimination must, therefore, remain unsettled until more intensive research has been done.

In comparison with the other two volumes in this field the present is more limited in scope. It emphasizes historical and legal rather than economic matters, while the Conference Board monograph stresses economic aspects, and that by Dr. Welch treats all of these in addition to other phases. Woosley is also less comprehensive than Welch in the number of methods of taxation covered and in giving no attention to taxation of other financial institutions, to which Welch devotes a chapter.

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British Methods of Industrial Peace: A Study of Democracy in Relation to Labor Disputes. By DUCKSOO CHANG. New York: Columbia University Press, 1936. Pp. 332. $4.25.

This book contains a history of British government intervention in labor disputes from the Cotton Arbitration Act of 1800 to the conciliation service, Industrial Court, and courts of inquiry of post-war years. It covers only less ground than was covered by Lord Amulree in his *Industrial Arbitration in Great Britain* (1929), until now the best known historical treatise on the subject. The part dealing with the period since the war adds to what may be obtained from such books as Alan G. B. Fisher's *Wages and Their Regulation in Great Britain since 1918* (1926), and gives a truer picture of the operations of the Industrial Court than is given by Mary Theresa Rankin's *Arbitration Principles and the Industrial Court* (1931).

As background, after a discussion of the basic questions of industrial peace, Dr. Chang reviews compulsory arbitration under the Cotton Arbitration Acts, 1800–1813; the Arbitration Act, 1824; the Councils of Conciliation Act, 1867; and the Arbitration (Masters and Workmen) Act, 1872. He then deals with the Conciliation Act of 1896 from its adoption to 1913, compulsory arbitration during the war, joint councils, the Industrial Court, courts of inquiry, and the special arrangements introduced in coal mining, the railway service, and other important industries which have presented special problems. The author appears to have made careful use of Parliamentary reports, the findings of commissions, and departmental reports. Moreover, during the two years he was in England, he obtained much assistance from persons experienced in conciliation and arbitration. Best of all, Dr. Chang evidences sound judgment in his selection of data and in conclusions arrived at. With him, industrial peace is something not obtained by conciliation and arbitration machinery alone. An appropriate industrial foundation is very essential.

The book contains the essential data and is well organized, well written, and adequately indexed. It is, therefore, a good contribution to the literature on "methods of industrial peace."

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BOOKS RECEIVED

Buehler, Alfred G. *The Undistributed Profits Tax.* (New York: McGraw-Hill Book Co., Inc., 1937.) Pp. ix+281.

Burdick, Edward Douglass. *Corporate Interest Payments, 1921–1932.* (Ph.D. Thesis, University of Pennsylvania.) (Philadelphia: Privately printed, 1936.) Pp. 130.

Cassels, John M. *A Study of Fluid Milk Prices.* "Harvard Economic Studies." (Cambridge: Harvard University Press, 1937.) Pp. xxvii+303.

Cator, W. L. *The Economic Position of the Chinese in the Netherlands Indies.* (Chicago: University of Chicago Press, 1936.) Pp. xi+264.

Ciriacy-Wantrup, Siegfried von. *Agrarkrisen und Stockungsspannen: Zur Frage der langen "Welle" in der wirtschaftlichen Entwicklung.* (Berlin: Paul Parey, 1936.) Pp. 445.

Clapham, J. H. *The Economic Development of France and Germany, 1815–1914.* (4th ed.) (Cambridge: At the University Press; New York: Macmillan Co., 1936.) Pp. x+420.

Commerce, Department of, Committee of Industrial Analysis. *The National Recovery Administration: Report of the President's Committee of Industrial Analysis.* (Washington, 1937.) Pp. x+240.

Congrès des Economistes de Langue Française, 1936, Travaux du. *L'Autarcie: La Corporation devant la doctrine et devant les faits.* (Paris: Les Editions Domat-Montchrestien, 1936.) Pp. 235.

Cornell, Francis G. *A Measure of Taxpaying Ability of Local School Administrative Units.* "Teachers College, Columbia University Contributions to Education." (New York: Bureau of Publications, Teachers College, Columbia University, 1936.) Pp. viii+114.

Curtis, Edmund. *A History of Ireland.* (New York: D. Van Nostrand Co., Inc. [1937].) Pp. xi+399.

Elsas, M. J. *Umriss einer Geschichte der Preise und Löhne in Deutschland: Vom ausgehenden Mittelalter bis zum Beginn des Neunzehnten Jahrhunderts.* Vol. I. (Leyden: A. W. Sijthoff's Uitgeversmaatschappij N.V., 1936.) Pp. x+808.

Fairchild, Fred Rogers; Furniss, Edgar Stevenson; Buck, Norman Sydney. *Economics.* (New York: Macmillan Co., 1937.) Pp. xviii+696.

Feldman, Herman. *Problems in Labor Relations.* (New York: Macmillan Co., 1937.) Pp. xxxix+353.

Franck, Louis R. *L'Expérience Roosevelt: et le milieu social américain.* (Paris: Librairie Félix Alcan, 1937.) Pp. 386.

Graves, W. Brooke. *Uniform State Action: A Possible Substitute for Centralization.* (Ph.D. Dissertation, University of Pennsylvania.) (Chapel Hill: University of North Carolina Press, 1934.) Pp. xii+368.

Handler, Milton. *Cases and Other Materials on Trade Regulation.* (Chicago: Foundation Press, Inc., 1937.) Pp. xxxv+1288.

Journal of the American Association of University Teachers of Insurance. "Proceedings of the Fourth Annual Meeting, Chicago, Illinois, Monday, December 28, 1936." Vol. IV, No. 1 (March, 1937). (First Printed Volume.) (Urbana [The Secretary of the Association, 411 Commerce Building, University of Illinois].) Pp. 92.

Keir, Malcolm. *Labor's Search for More.* (New York: Ronald Press Co., 1937.) Pp. xii+527.

Kennedy, William F. *The Objective Rate Plan: For Reducing the Price of Residential Electricity.* (New York: Columbia University Press, 1937.) Pp. 83.

Machray, Robert. *The Poland of Pilsudski: Incorporating "Poland, 1914–1931" Much Condensed, and Carrying on the History of Poland till Mid-July 1936.* (New York: E. P. Dutton and Co., Inc., 1937.) Pp. 508.

Maxwell, J. A. *Federal Subsidies to the Provincial Governments in Canada.* "Harvard Economic Studies" (Cambridge: Harvard University Press, 1937.) Pp. xi+284.

May, Elizabeth Stoffregen. *Government, Business, and the Individual: A Guide for Studying Current Controversy in Economic, Political, and Social Questions.* (Washington: American Association of University Women, 1936.) Pp. 112.

Mitchell, Broadus. *General Economics: An Introductory Text.* (Rev. and enlarged ed. of *A Preface to Economics.*) (New York: Henry Holt & Co., 1937.) Pp. x+772.

Mitchell, Wesley C. *The Backward Art of Spending Money, and Other Essays.* (New York: McGraw-Hill Book Co., Inc., 1937.) Pp. vii+421.

Muto, Chozo. *A Short History of Anglo-Japanese Relations.* (Tokyo: Hokuseido Press, 1936.) Pp. v+83.

Nourse, Edwin G.; Davis, Joseph S.; Black, John D. *Three Years of the Agricultural Adjustment Administration.* (Washington: Brookings Institution, 1937.) Pp. xiv+600.

O'Leary, Paul M., and Patterson, John H. *An Introduction to Money, Banking, and Corporations.* (New York: Macmillan Co., 1937.) Pp. ix+175.

Palmer, Gladys L., and Wood, Katherine D. *Urban Workers on Relief,* Part I: *The Occupational Characteristics of Workers on Relief in Urban Areas, May, 1934.* (Washington: Division of Social Research, Works Progress Administration, 1936.) Pp. xxvii+203.

Pascal, Jean-Marie. *Manipulations monétaires et commerce international.* (Paris: Librairie du Recueil Sirey, 1936.) Pp. 167.

Pell, Orlie. *The Office Worker—Labor's Side of the Ledger.* (New York: League for Industrial Democracy, 1937.) Pp. 22.

Phillips, C. A.; McManus, T. F.; and Nelson, R. W. *Banking and the Business Cycle: A Study of the Great Depression in the United States.* (New York: Macmillan Co., 1937.) Pp. xiv+274.

Pirou, Gaëtan. *Economie politique et facultés de droit.* (Paris: Librairie du Recueil Sirey, 1937.) Pp. 126.

Pittsburgh, University of, Bureau of Business Research. "Bureau of Business Research Statistical Handbooks," No. 3. *Real Property Inventory of Allegheny County.* (Pittsburgh, 1937.) Pp. x+311.

Polski Bank, *Compte rendu des opérations de la, pendant l'année 1936.* (Warsaw, 1937.) Pp. 38.

Prather, Charles L. *Money and Banking.* (Chicago: Business Publications, Inc., 1937.) Pp. xvi+559.

Tax Policy League, Inc. *How Shall Business Be Taxed?* Symposium conducted by the Tax Policy League, December 28–29, 1936, in Chicago, Illinois. (New York, 1937.) Pp. vii +175.

Tremelloni, Roberto. *L'Industria tessile italiana: Come è sorta, e come è oggi.* (Turin: Giulio Einaudi, 1937.) Pp. 294.

Twentieth Century Fund, Inc., Committee on Taxation. *Facing the Tax Problem: A Survey of Taxation in the United States and a Program for the Future.* (New York, 1937.) Pp. xxiii+606.

Viner, Jacob. *Studies in the Theory of International Trade.* (New York: Harper & Bros., 1937.) Pp. xv+650.

Wales, South, The Second Industrial Survey of, Vol. I: *Industries;* Vol. II: *Facilities;* Vol. III: *Development.* Published on behalf of the National Industrial Development Council of Wales and Monmouthshire. (Cardiff: University Press Board, 1937.) Pp.: I, 500; II, 295; III, 404.

Walker, Harvey. *Public Administration in the United States.* (New York: Farrar & Rinehart, Inc., 1937.) Pp. x+698.

Weinfeld, Abraham C. *Labor Treaties and Labor Compacts.* (Bloomington: Principia Press, Inc., 1937.) Pp. vi+136.

Wells, F. A. *The British Hosiery Trade: Its History and Organization.* (London: George Allen & Unwin, Ltd., 1935.) Pp. 252.

Williamson, Francis Torrance. *Germany and Morocco before 1905.* "Johns Hopkins University Studies in Historical and Political Science." (Baltimore: Johns Hopkins Press, 1937.) Pp. 210.

Zizek, Franz. *Wie statistische Zahlen entstehen: Die entscheidenden methodischen Vorgänge.* (Leipzig: Hans Buske, 1937.) Pp. iv+151.

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